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ABSTRACT

The handbook is intended to be part of a graduate course entitled "Introduction to Exceptional Children" which is taught via computer assisted instruction and emphasizes the social, psychological, and physiological characteristics of the mentally, visually, aurally, physically, emotionally, or neurologically handicapped primary grade child to whom, if identified early, remedial treatment can be given before educational retardation becomes a problem. The following topics are treated: educational information processing model; interrelationships of handicaps; decision process; gathering information about children; reliability, validity, and usability of evaluation procedures; individual differences and normality; profiles of individual differences; Denver Developmental Screening Test; mental retardation; the disadvantaged; emotional disturbance; First Grade Screening Test; Visual problems; hearing problems; speech problems; Metropolitan readiness tests; motor, physical, and health problems; drug abuse; learning disabilities; documentation and referral procedures; and case histories. A glossary of approximately 350 terms gives definitions of terms such as ability profile, perseveration, and sociogram as they are used in the course. Stressed throughout the course are the decision process, the information processing model, observable behaviors, individualization of instruction, and data gathering and documentation. (See ED 054 063 for a related document). (DB)

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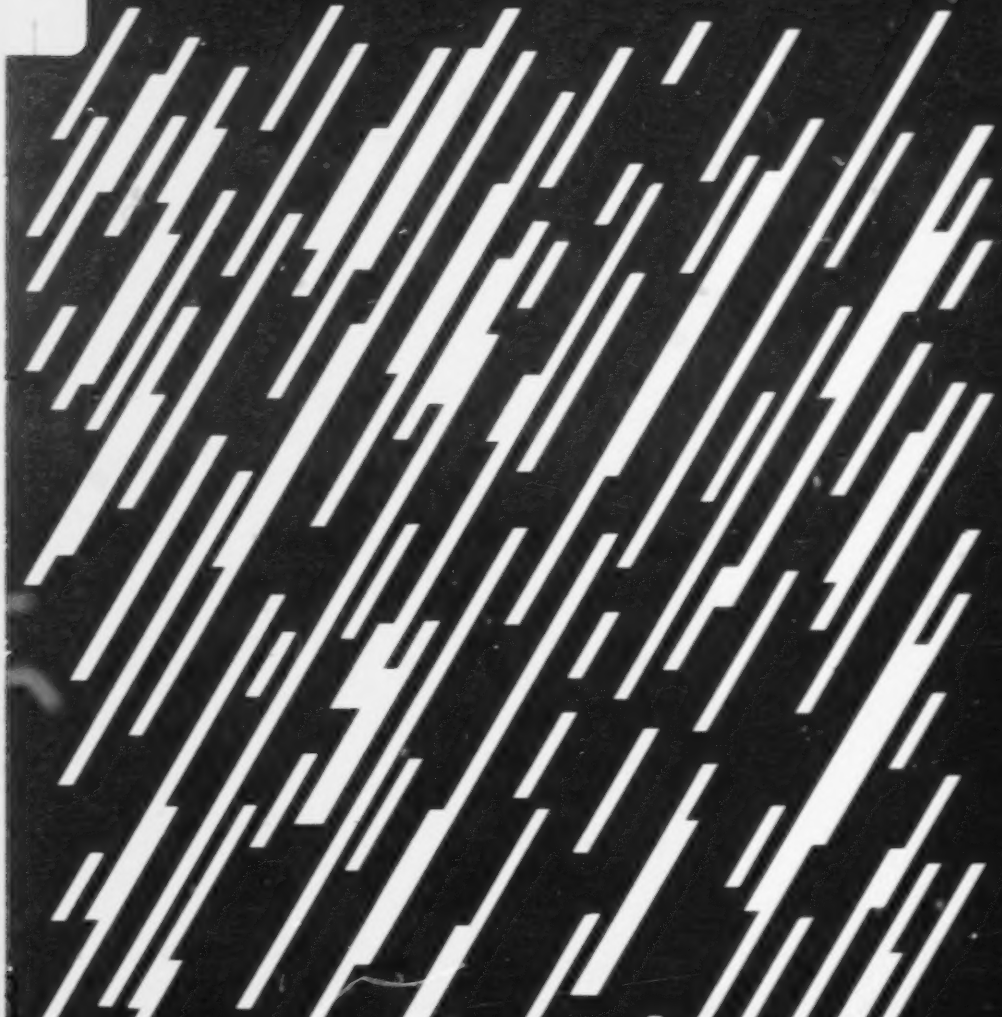
THE COMPUTER ASSISTED
INSTRUCTION LABORATORY
THE PENNSYLVANIA STATE
UNIVERSITY

Report No. R-36

Computer Assisted Remedial Education: Early Identification of Handicapped Children

G. Phillip Cartwright
Carol A. Cartwright



ED 077165

Computer Assisted Remedial Education:

Early Identification
of Handicapped Children

G. Phillip Cartwright
and
Carol A. Cartwright

Computer Assisted Instruction Laboratory
College of Education
The Pennsylvania State University
University Park, Pa. 16802

Report No. R-36

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EDUCATION & WELFARE
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PREFACE

Computer-assisted instruction (CAI) has grown from a dream to a reality within a very short period of time. This handbook was prepared to accompany a full-length college course taught completely by computer-assisted instruction. The course is designed to teach the content of The Pennsylvania State University graduate level course entitled "Introduction to Exceptional Children." It is catalogued as "EEC 400: Introduction to Exceptional Children." The catalogue description reads as follows: "the social, psychological, and physiological aspects of the mentally retarded, and the visually, aurally, physically, emotionally, and neurologically handicapped." (3 credits)

The CAI version of the course is known as CARE 1 or CARE: Computer Assisted Remedial Education. The "1" in CARE 1 indicates that this course is the first of several related CAI courses that will become available in the areas of remedial or special education.

The purpose of the course is to prepare teachers and other interested school related personnel to know the characteristics of, and to be able to identify, handicapped children. The course provides the knowledges and skills necessary to identify children who would become educationally retarded by the age of 9 or 10 if remedial treatment were not provided.

Persons who complete this course will be able to identify those children who have handicaps that may be detrimental to their educational programs. Furthermore, persons who complete the course will be able to decide which children need special help from specialists and which children can be helped without the aid of specialists.

The course is presented by means of a computer assisted instruction system. Each student participating in the program works at an individual instructional station which is linked with the computer. Each station is comprised of the following components: 1) a small television screen [cathode ray tube (CRT)] for presenting the main content of the program, 2) a typewriter-like keyboard for responding and constructing answers to questions in the program, 3) a light pen for selecting answers on the face of the television screen (CRT), 4) an audio device for presenting sounds of childrens' speech patterns, supplemental direction, correct pronunciation of technical words, and remedial help for the student, and 5) a self-contained image projector and screen for displaying photographs, charts, diagrams, etc.

Each student works individually at his own station on the program content and takes his own individual version of the course as determined by the answers and responses he makes as he goes through the program. Responses are evaluated by the computer program and appropriate feedback is given to each student.

Students who take the CAI course receive sets of materials at various points throughout the course. The materials include: _CARE Handbook_, _Denver Developmental Screening Test_, _Metropolitan Readiness Test_ and the _First Grade Screening Test_. The _CARE Handbook_ is an extensive _Handbook_ which is used by the student throughout the course. It contains summaries of CAI material, charts, illustrations, references, tables, and other materials essential for completion of the CAI course. Students should keep the _Handbook_ with them at all times when they are working with computer-assisted instruction. Furthermore, each student should read ahead in the _Handbook_ beyond the point at which he is working with the computer. The _Handbook_ is divided up into chapters which parallel the structure of the course. Consequently, prior to working with Chapters 1 and 2 at the computer terminals, participants should read Chapters 1 and 2 in the _Handbook_. It is a good idea to keep at least two chapters ahead in the _Handbook_ of what is being studied at the computer terminal.

ACKNOWLEDGMENTS

This project, Computer Assisted Remedial Education, is made possible through grants from the Bureau of Education for the Handicapped and the Bureau of Educational Personnel Development, United States Office of Education; and The Penn State Foundation. The development and evaluation of the CAI course took place under the aegis of the Penn State Computer Assisted Instruction Laboratory, Keith A. Hall, Director.

Ultimate responsibility for the course content rests with the principal investigators, Professor G. Phillip Cartwright and Professor Harold E. Mitzel. Professor Carol A. Cartwright played a major role in the over-all development of the conceptual model of the course as well as the writing of many individual chapters. The professional persons who have contributed to the content areas and authored some or all of individual chapters are Asa Berlin, Karen Braddock, Carol A. Cartwright, G. Phillip Cartwright, Judson McCune, Harold Mitzel, Gerald Robine, David Sabatino, Mary Sabatino, Deborah Schreiber, Robert Sedlak, Richard Starr, and Mary Ann Villwock. Alma Fandal, Steven Hunka, Ralph Peabody, and Herbert Quay served as consultants on the project.

The investigators are indebted to the following people for their contributions to the project.

Programers who interpreted the material of the authors and provided the coding and computer programing in the Coursewriter II language were Karen Braddock, Rosemary Hollick, Carolyn Kendall, David Palmer, and Bonnie Shea. David Palmer supervised operations of preparing the course material for the computer and coordinated activities of the various technical and support people. Graduate Assistants on the project were Judson McCune, Robert Sedlak, Richard Starr, Mary Ann Villwock, and David Yens.

Leslye Bloom prepared all images for the image projector and illustrations for the manual.

Karl Borman was in charge of technical support.

The narrative was recorded by Croy Pitzer.

Clerical support was provided by Kris Sefchick, Barbara Lippincott, Kathy Hatton, Sara Jane Thomas, Judy Harley, and Darlene Smith.

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CHAPTER 1

OVERVIEW*

Purpose of CARE 1

The purpose of the course called Computer Assisted Remedial Education is to give educational personnel the knowledge and skills necessary to deal effectively with children who have educational problems.

The course is appropriate for teachers of all grade levels, but especially for preschool and elementary school teachers. The course is designed also to be of interest to other educational personnel such as principals and other administrators and supervisors; special class supervisors; school nurses; psychologists; aides; music, art, shop, and physical education specialists; special services personnel; and other school related personnel, including day care workers.

CARE 1 is designed to help school-related personnel carry out two vital responsibilities:

1. identify young children with problems that might interfere with the educational process;
2. provide early intervention for the remediation of the children's problems; or prevent the occurrence of problems.

If handicapped children can be identified while they are still young, it may be possible to prevent the occurrence of a more serious handicap later on. Handicapping conditions are usually cumulative; that is, if a child has an educational problem that goes unidentified, he is likely to fall farther and farther behind his peers in school. Eventually, his lack of progress will be obvious, but by then it may be too late for him to catch up. Teachers and other school personnel are in a unique position to help identify problems of children and to prevent the cumulative educational deficit which usually occurs hand-in-hand with undetected problems.

The problem of undetected handicaps is probably larger than you might imagine. For example, the Commonwealth of Pennsylvania has a population of approximately 700,000 school age children who are handicapped in one way or another. Of these children,approximately 180,000 are not receiving the special education services that they require. The national picture is even more distressing: roughly 3-3/4 million of the 6 million handicapped children in the United States are not receiving the vital services.

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*The CAI version of this chapter was written by Professor G. Phillip Cartwright.

Educational personnel can help ease this woeful situation in at least two ways.

One way educational personnel can help is to find the children who need help now, or who will need help later, while the children are still young. It is entirely possible to ward off some serious educational problems if the problems are caught before they get out of hand. The CARE course will help educational personnel identify children who are handicapped or who are likely to develop problems later.

The second way that educational personnel can help alleviate the problem of handicapped children in the United States is to provide some help at the classroom level to children who need special considerations. The CARE course will provide useful information that can be applied to help individualize classroom instruction in order to increase the learning of all the children in the class.

The CARE Point of View

The word "behavior" is used over and over throughout the course. The word behavior in the CARE course means an activity, or an observable act or performance of a child. The term behavior does not mean deportment or conduct in this context.

Throughout the course, the importance of dealing with children's observable behavior will be stressed. The philosophy of this course states that the most fruitful approach for improving children's education is for educators to work with the observable behaviors of children.

Many references will be made to the importance of working with children on an individual basis. In effect,the CARE course is concerned with the detailed analysis of individual differences in children. Persons who complete this course will be able to pinpoint similarities and differences among children in such things as vision, hearing, and motor skills as well as specific strengths and weaknesses in the academic abilities of individual children. In connection with this last point, the course will be helpful in providing a systematic means of monitoring the progress of children.

Handicapped children are those children who deviate so far from average that they can not profit satisfactorily from regular school programs and thus require special provisions in order to achieve their educational potentials.

Plate 1.1

An Educationally Oriented Definition of Handicapped Children

Handicapped children are those children who deviate so far from the average that they cannot profit satisfactorily from regular school programs and thus require special provisions in order to achieve their educational potentials.

Special educators define the term "Exceptional Children" in a broad manner. In fact, the definition of exceptional children is identical to the definition of handicapped children given in Plate 1.1. Exceptional children are the very bright as well as the dull. Very bright or gifted children need special provisions, too. Space limitations prevent inclusion of information about gifted children in this course. Educational and legislative definitions of handicapped children are given in Plates 1.1 and 1.2.

Legislative definition of categories of handicapped children: mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired children who by reason thereof require special education.

Legislative Definition of Categories of Handicapped Children

Mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired children who by reason thereof require special education.

Plate 1.2

It should be obvious that the legislative definition of handicapped children is not too useful for identifying these children. The educationally oriented definition is much more desirable for our purposes.

Handicap and Disability

The terms "handicap" and "disability" are often used interchangeably. It is sometimes useful to make a distinction between these two terms, although in some instances, the two can be used synonymously without a serious breach in communication. A disability is a loss of function of some part of the body; e.g., partial or complete loss of sight, hearing, use of certain muscles, etc. Usually a disability refers to the loss of function resulting from a structural impairment at the cellular tissue level. In more recent years, the term learning disability has come into widespread usage. The term learning disability does not necessarily mean a loss of function of a part of the body. In many cases, learning handicap might be more appropriately used than the term learning disability.

A handicap is more difficult to define than a disability primarily because of the effects of the situation. A person with a disability may be handicapped in one situation but not in another. For example, a person with a slight hearing loss might be at a handicap if he were to attempt to maintain a conversation with a friend out on a noisy street corner. On the other hand, the hearing loss, which is a disability, might not result in a handicap if the person were able to resume his conversation in a quiet room.

Categories: Pros and Cons

Educators have discovered the hard way that some children who have been labeled as mentally handicapped are only handicapped in the academic atmosphere of the middle class school. Often such children turn out to be self-supporting citizens once they leave the school situation. Even in school, special class youngsters may excel in art, music, or athletics. Thus the impact of the disability may be stronger in one situation than in another. There has been a tendency in the past to categorize children on the basis of apparent disabilities which are most obvious in the school situation. This procedure has not always been successful. Many educational leaders who work with handicapped children are very dissatisfied with the traditional method of categorizing handicapped children. The federal government has exercised a great deal of leadership in recent years and has rapidly expanded services for the handicapped. In order to accomplish its goals, the government established and has continued to use "categories" of exceptional children. Unfortunately, the category system does not always aid the educator. Often not much is gained from using the category system, but we stand the risk of unfairly penalizing or stigmatizing children by labeling them. Labeling a child as educable mentally retarded (EMR) tells us nothing specific about the child in terms of reading, arithmetic, or other academic skills. It tells us nothing about the relevant strengths and weaknesses of the child, nor of his particular interests and special abilities.

In order to deal effectively with both normal and handicapped children, it is essential to work with the children as individuals, and not as a group, even though the group is labeled as EMR or normal.

We would like to toss out the outmoded practice of labeling and categorizing children and replace it with a completely individualized approach to education. However, there are some compelling reasons why we will continue to use some traditional terms and concepts.

First, much of the information that is relevant to the study of children with problems is tied to the category system. Thus, by rejecting the category system we stand the risk of losing much relevant, valuable information.

Second, the category system is so well known that the dramatic departure from it would tend to inhibit communication among professionals. Since it is the purpose of this course to facilitate communication among teachers and other professionals, we feel obligated to use terminology and concepts that are well established and understood by most professionals.

Finally, a more appropriate model for dealing with handicapped children has not been developed to the extent that it is feasible to put into immediate use in the schools.

In short: most educators do not like the category system, but they are stuck with it. If this CARE course is successful, you will be able to use the best ideas associated with the traditional category system while simultaneously keeping new ideas in perspective and dealing with the educationally relevant differences among children.

In the final analysis, classroom teachers must deal with the individual behavioral differences among and within children in order to successfully solve educational problems and enhance achievement.

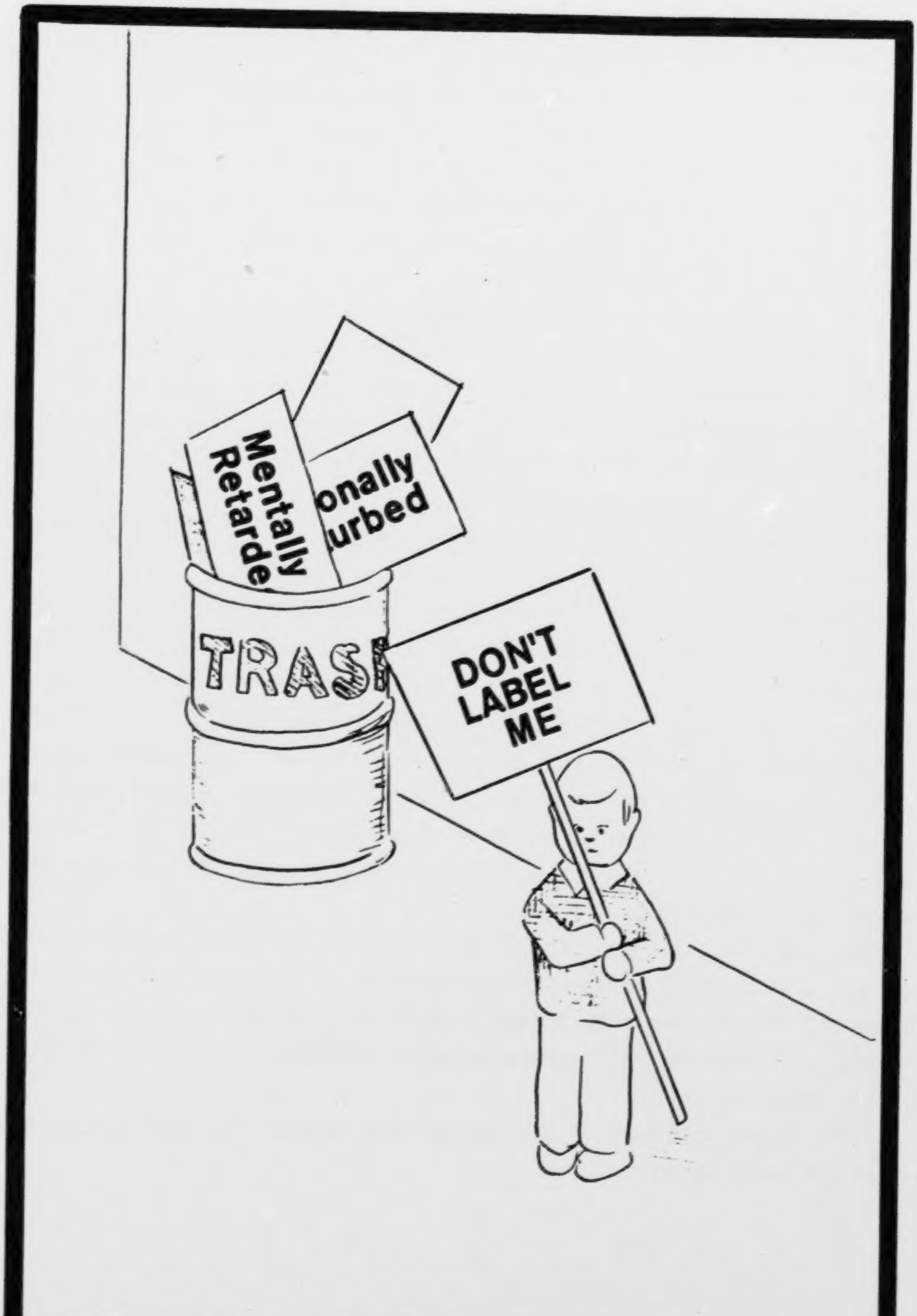
Mentally
Retarde
onally
urbed
TRAS
DON'T
LABEL
ME

Plate 1.3

A Decision Process

You may be wondering how you can systematically monitor the progress of children and make logical decisions about children who seem to have problems of one kind or another. The decision process shown on Plate 1.4 along with other information you will receive, should help you decide whether or not the problems of certain children are critical. The CARE course is designed to provide you with all the skills and information you need in order to use the decision process to its full advantage.

Look at Box #2 of the decision process in Plate 1.4. First, you will learn to evaluate continually the children with whom you work in order to identify children who deviate from normal expectations or patterns.

In order to accomplish the task in Box #2, you must know something about evaluation. Hence, evaluation procedures will be taught. You must also know quite a bit about handicapped children. Therefore much of the course is devoted to teaching the characteristics of handicapped children and how to identify atypical or abnormal patterns of behavior.

Once you have learned to identify deviations for normal, you will be able to make the decision in Box #3. If no children have deviations, you return to Box #2. Thus, the idea is stressed that evaluation of all children should be a continuous and cyclical task for the teacher.

If there are children with deviations or problems, the teacher should gather more precise information about the nature and extent of the deviations (Box #4) You will be able to choose and use appropriate commercial and teacher-made appraisal and diagnostic procedures to identify strengths and weaknesses of individual children.

The use of appropriate evaluation procedures for studying individual differences will prepare you to make the decisions at Boxes #5 and #6. If you decide that a child needs help from a specialist, you will know how to refer a child, and what kind of information you should obtain to inform the specialist about the child.

Finally,you will acquire some valuable procedures for working with both normal and handicapped children.

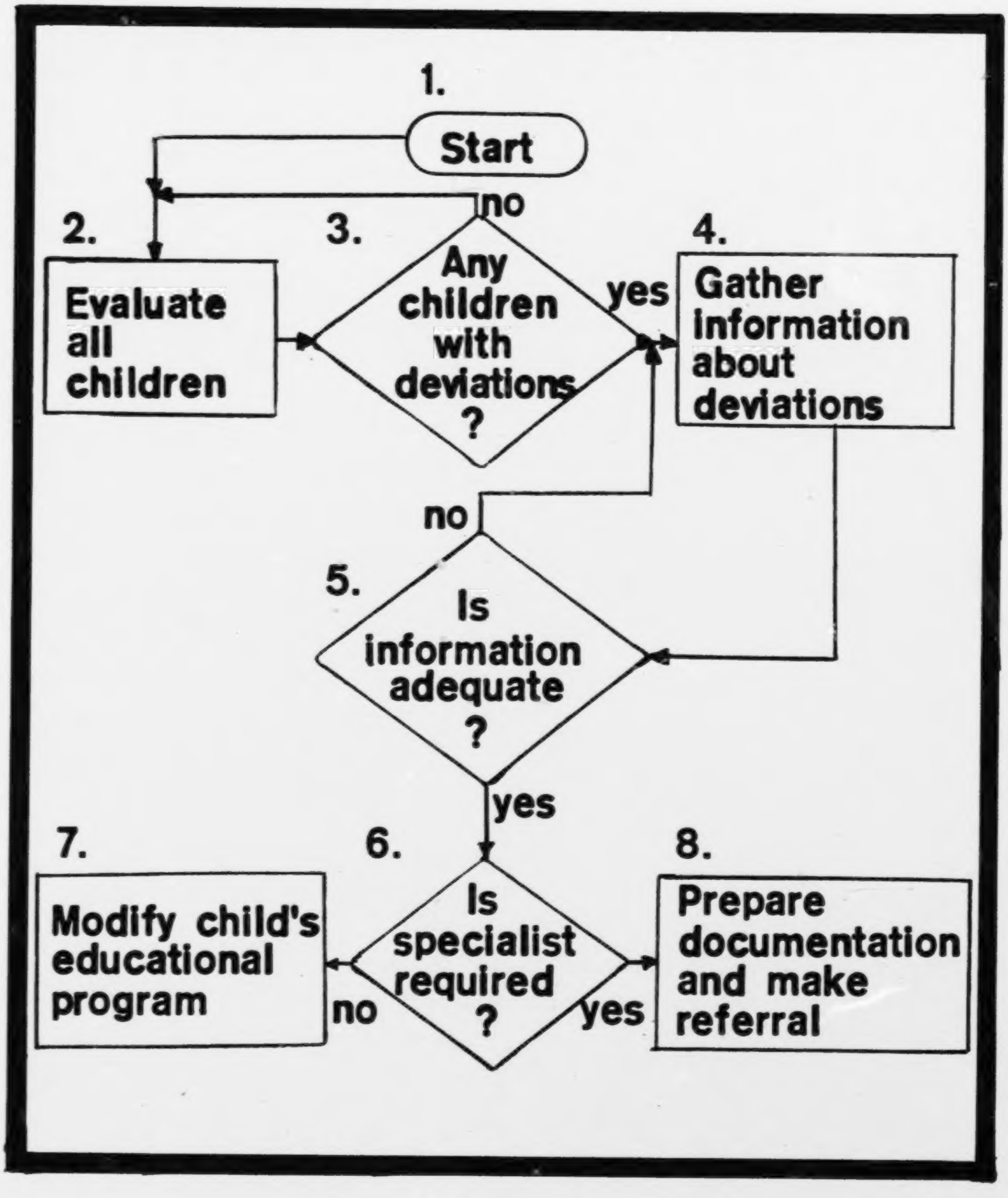
1.
Start
no
2.
3.
4.
Evaluate all children
Any children with deviations ?
yes
Gather information about deviations
no
5.
Is information adequate ?
yes
7.
6.
8.
Modify child's educational program
Is specialist required ?
no
yes
Prepare documentation and make referral

Plate 1.4

Organizations Concerned with the Handicapped

The following list of organizations is representative of the many and diverse groups concerned with handicapped children and adults. Many of the organizations will supply free literature upon request.

Mental Retardation

American Association on Mental Deficiency
1601 West Broad Street
Columbus, Ohio 43223

An open organization dealing with mental retardation

The Division on Mental Retardation
The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D. C. 20005

A division promoting educational services for the mentally retarded

Joseph P. Kennedy Foundation
1413 K. Street, N. W.
Washington, D. C. 20005

A private foundation financing work in the field of mental retardation

National Association for Retarded Children, Inc.
420 Lexington Avenue
New York, New York 10017

A voluntary organization dedicated to improving services to the mentally retarded

Pennsylvania Association for Retarded Children, Inc.
12 North Second Street
Hall Building
Harrisburg, Pennsylvania 17101

A voluntary organization dedicated to improving services to the mentally retarded

Culturally Disadvantaged

Child Welfare League of America
345 East 45th Street
New York, New York 10017

This is a federation of both private and public child welfare agencies in the United States and Canada. The purpose is to help child welfare agencies provide social services for children and their families.

U. S. Welfare Administration:
Children's Bureau
Washington, D. C.

A governmental agency dealing with the welfare of children

U. S. Welfare Administration:
Office of Juvenile Deliquency and Youth Development
Washington, D. C.

A governmental agency administering projects in local communities

Emotional Disturbance

The American Association of
Psychiatric Clinics for Children
250 West 57th Street
New York, New York 10019

An association of clinics aimed at the field of child psychiatry

American Orthopsychiatric Association, Inc.
1790 Broadway
New York, New York 10019

A restricted membership organization dealing with human behavior

The Council for Children with Behavioral Disorders
The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D. C. 20005

A group promoting work with children who have behavioral disorders

National Association for Mental Health, Inc.
10 Columbus Circle
New York, New York 10019

A voluntary organization working to improve services to the mentally ill

Visual Problems

American Association of Instructors of the Blind
2363 South Spring Avenue
St. Louis, Missouri 63110

An open organization working for the improved education of the visually handicapped

American Association of Workers for the Blind
1511 K Street, N. W.
Washington, D. C. 20005

An open organization promoting services for the blind

American Foundation for the Blind, Inc.
15 West 16th Street
New York, New York 10011

A voluntary agency promoting services to the blind

American Printing House for the Blind, Inc.
1838 Frankfort Avenue
Louisville, Kentucky 40206

A non-profit publisher of literature for the blind and partially sighted

Association for Education of the Visually Handicapped
711 14th Street, N. W.
Washington, D. C. 20005

Organization providing information on the visually handicapped

Division for the Visually Handicapped,
Partially Seeing and Blind
The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D. C. 20005

A division encouraging better educational services for visually handicapped children

The National Society for the Prevention of Blindness, Inc.
16 East 40th Street
New York, New York 10016

A voluntary agency investigating causes of blindness or defective vision

Hearing Problems

Alexander Graham Bell Association for the Deaf
1537 35th Street, N. W.
Washington, D. C. 20007

An open organization promoting information relating to the deaf

American Hearing Society
919 18th Street, N. W.
Washington, D. C. 20006

A federation of speech and hearing organizations working toward the improvement of services in the field

American Speech and Hearing Association
Bethesda
Maryland 20014

A restricted membership organization to encourage the study of speech and hearing

The Convention of American Instructors of the Deaf
Gallaudet College
Washington, D. C. 20002

An open membership organization promoting the education of the deaf

Speech Problems

American Speech and Hearing Association
Bethesda
Maryland 20014

A restricted membership organization to encourage the study of speech and hearing

Motor and Health Problems

American Academy for Cerebral Palsy
1520 Louisiana Avenue
New Orleans, Louisiana 70115

A restricted membership organization for MD's and Ph.D.'s actively working with cerebral palsy

American Academy of Pediatrics
1801 Hinman Avenue
Evanston, Illinois 60201

A restrictive membership organization working for the health and welfare of children

Motor and Health Problems - Cont.

American Diabetes Association
18 East 48th Street
New York, New York 10017

American Heart Association
44 East 23rd Street
New York, New York 10010

American Occupational Therapy Association
250 West 57th Street
New York, New York 10019

An open membership organization to promote occupational therapy for handicapped children

American Physical Therapy Association
1790 Broadway
New York, New York 10019

A restricted membership organization to improve physical therapy

American Public Health Association, Inc.
1790 Broadway
New York, New York 10019

An open membership organization promoting health

Association for the Aid of Crippled Children
345 East 46th Street
New York, New York 10017

A foundation supporting work in the field of prevention and treatment of handicaps of children

The Child Study Association of America
9 East 89th Street
New York, New York 10028

The Association of Educators of Homebound
and Hospitalized Children
The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D. C. 20005

An association promoting professional relationships among educators

Motor and Health Problems - Cont.

National Epilepsy League, Inc.
203 North Wabash Avenue
Chicago, Illinois 60601

A voluntary agency providing services for epileptics

Muscular Dystrophy Association of America, Inc.
1790 Broadway
New York, New York 10019

A voluntary agency dedicated to finding the cure of muscular dystrophy and related neuromuscular diseases

The National Institute of Health
Bethesda
Maryland 20014

A governmental agency supporting research and training

The National Easter Seal Society for
Crippled Children and Adults
2023 West Ogden Avenue
Chicago, Illinois 60612

A voluntary organization providing services for crippled children and adults

United Cerebral Palsy Association, Inc.
321 West 44th Street
New York, New York 10036

An open membership organization promoting work in cerebral palsy

The United Epilepsy Association
111 West 57th Street
New York, New York 10019

A voluntary health agency encouraging work in the area of epilepsy

Learning Disability

Association for Children with Learning Disabilities
2200 Brownsville Road
c/o Mrs. Robert Tillotson
Pittsburgh, Pennsylvania 15210

A national organization concerned with learning disabilities

Learning Disability - Cont.

The Division for Children with
Communication Disorders
The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D. C. 20005

An organization promoting education of children with communication disorders

National Association for Brain-Injured Children
1617 East 7th Street
Brooklyn, New York 11230

A federation of state affiliates serving as a clearing house in the field

Pennsylvania ACLD
P. O. Box 664
Allentown, Pennsylvania 18105

The Pennsylvania Association for Children with Learning Disabilities is the state division of the ACLD.

General

The American Legion
National Child Welfare Division
700 Pennsylvania Avenue
Indianapolis, Indiana 46204

A restricted membership organization working to insure care and protection for children

American Personnel and Guidance Assoc.
1605 New Hampshire Avenue, N. W.
Washington, D. C. 20009

A restricted membership organization dedicated to improving guidance and personnel activities

American Psychiatric Association
1700 Eighteenth Street, N. W.
Washington, D. C. 20009

A professional organization whose purpose is to promote the study of the nature, treatment, and prevention of mental disorders

General - Cont.

American Psychological Association
1200 Seventeenth Street, N. W.
Washington, D. C. 20036

A professional organization to promote the study of psychology and human welfare

Association for Physical and Mental Rehabilitation
105 Lawrence Street
Rehoboth Beach, Delaware 19971

A restricted membership organization to provide exercise therapists for physical and mental rehabilitation

The Association of Rehabilitation Centers
828 Davis Street
Evanston, Illinois 60201

A federation of rehabilitation centers promoting the expansion of rehabilitation services

The Council for Exceptional Children
1201 16th Street, N. W.
Washington, D. C. 20036

An open membership professional organization promoting the evaluation of exceptional children

The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D. C. 20005

The Association for the Gifted - An association of persons concerned with the gifted

The Council of Administrators of Special Education - A restricted membership group concerned about the administration of special education programs

The Teacher Education Division - A division promoting improved teacher education

Bureau of Education for the Handicapped
Department of Health, Education, and Welfare
Washington, D. C. 20214

A government agency administering work with the handicapped

General - Cont.

ERIC (Educational Resources Information Center)
c/o U. S. Department of Health, Education, and Welfare
Washington, D. C. 20214

A division of HEW dealing in the dissemination of information in the field of education

Goodwill Industries of America, Inc.
1913 N. Street, N. W.
Washington, D. C. 20036

A voluntary agency providing vocational evaluation, training, and placement for handicapped people

International Society for the
Rehabilitation of the Disabled
701 First Avenue
New York, New York 10017

A federation of voluntary organizations promoting rehabilitation services

Metropolitan Life Insurance Company
One Madison Avenue
New York, New York 10010

An insurance company providing films and publications dealing with health and with children

National Association of Sheltered Workshops
and Homebound Programs
1029 Vermont Avenue, N. W.
Washington, D. C. 20005

An open membership organization providing service to handicapped people

National Institute of Mental Health
Box 1080
Washington, D. C. 20013

A restricted membership organization promoting the education of handicapped children

National Clearinghouse on Drug Abuse Information
National Institute on Mental Health
5454 Wisconsin Avenue
Chevy Chase, Maryland 20015

General - Cont.

The National Catholic Education Association
Special Education Department
4472 Lindell Boulevard
St. Louis, Missouri 63108

An open membership organization promoting services to Catholic handicapped children

The National Foundation
800 Second Avenue
New York, New York 10017

A voluntary health agency dealing with virus diseases

National Recreation Association
3 West 8th Street
New York, New York 10011

A voluntary agency providing services to agencies, organizations, and individuals

National Rehabilitation Association, Inc.
1029 Vermont Avenue, N. W.
Washington, D. C. 20005

An organization encouraging the advancement of rehabilitation of physically and mentally handicapped persons

The Ohio Youth Commission
Columbus
Ohio

Directory of Schools, Agencies, and Institutions for Children with Special Needs, Columbus, Ohio, 1965

The President's Committee on
Employment of the Handicapped
14th and Constitution Avenue
Washington, D. C. 20020

A committee promoting programs concerning the handicapped

U. S. Vocational Rehabilitation Administration
Washington, D. C.

A governmental agency promoting the rehabilitation of handicapped persons

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CHAPTER 2

EDUCATIONAL INFORMATION PROCESSING MODEL*

In this chapter an attempt will be made to provide a convenient "model" or structure to which we can relate information about various handicaps that children may have. There are so many diverse sources and kinds of information about exceptional children that it is useful to sort out the various bits of information and relate them to a standard model or design. The model that we have chosen to use is the Educational Information Processing Model. It portrays the manner in which children receive, process and use educational information.

There are many factors, both internal and external to the child, which can handicap or delay his educational growth. In many cases, a child may have a slight handicap which goes undetected for years. For example, a child who is slightly hard of hearing may miss many of the nuances of the language; the richness of the English language may be lost to him and he will be unable to use language as effectively as other children can. As time goes on, and the handicap remains undetected, the effects of the handicap grow stronger. The child drops farther and farther behind his contemporaries and eventually the handicap may become quite noticeable. In many cases, the negative effects on the child's educational program may be irreversible because of the late discovery of the handicap. By the time the handicap is discovered, the child may be too far behind to catch up with his peers.

Consequently, early identification of handicaps in children is essential so that we can provide the necessary help to remediate the problem. If a child's problem is adequately diagnosed, then special help can be given to the child so that he can overcome the handicap or at least become better adjusted to the limitations of the disability.

Teachers and other educational personnel are in a unique position to observe many different children and to aid in the process of identifying handicaps in young children. In order to do so in an effective manner, however, educational personnel should have available to them an organized and systematic body of information related to handicapped children.

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[*] The CAI version of this chapter was written by Professor G. Phillip Cartwright.

Purposes of Educational Information Processing Model

1. To aid in identifying children with handicaps.
2. To provide a common frame of reference for communicating with other professionals.

Plate 2.1

Purposes of the Educational Information Processing Model

It is the purpose of this chapter to outline a model or "plan" to help us systematize and organize the vast amount of knowledge about exceptional children. The model deals with the manner in which children and adults receive information from the outside world, process it, and engage in various behaviors related to processed information.

The two main purposes of the Educational Information Processing Model (System) are listed in Plate 2.1.

The model which is suggested and which will be taught in this course will help teachers identify children who have handicaps before the children get too far behind in school. Identification of a handicap is much more difficult than it seems, especially if the handicap is subtle or is on the borderline between typical and abnormal.

Identification of handicaps is both desirable and necessary. However, simple identification is not sufficient to help handicapped children in school. Some special ameliorative or remedial help must be given to the child. In many cases the regular classroom teacher, with a little help, will be able to provide special help for handicapped children. In other cases, however, professionals who are trained to deal especially with handicapped children must be consulted.

The regular classroom teacher is often not trained to provide special aid to handicapped children. He may need the advice and aid of other professional people who are trained to make specific diagnoses and to help set up remedial programs and prescriptions for children. In order to request this aid, the teacher must be able to communicate effectively with the professionals. The second purpose of the Information Processing Model is to help teachers communicate effectively with other professional personnel. Professional personnel or specialists who may help the teacher with handicapped children are school nurses, speech therapists, school psychologists, audiologists, physical therapists, and resource teachers. Other professionals or specialists who deal with handicapped children may be available in some schools.

If a teacher suspects that a child has a handicap, it is important for her to state the problem precisely when reporting the child's problem to specialists. The Educational Information Processing Model will help teachers and other professionals use terms that have the same meaning to all. Thus, a common frame of reference relative to handicapped children will be made available.

The Information Processing Model will assist in the identification of handicapping conditions in children and will provide a frame of reference that will facilitate effective communication about children with educational and other professional persons concerned with the welfare of children.

The problems of children are so diverse that no one system or model can attempt to cover all the important factors. For our purposes, we will simplify the model in order to expedite communication among professionals.

Educational Information Processing Model

Plate 2.2 is a pictorial illustration of the Educational Information Processing Model. The general idea of the model has been used by linguists and psychologists for many years. The model portrays the idea that information is received through the input channels of vision, hearing, and touch. The information is then processed within the processing unit which is represented as the

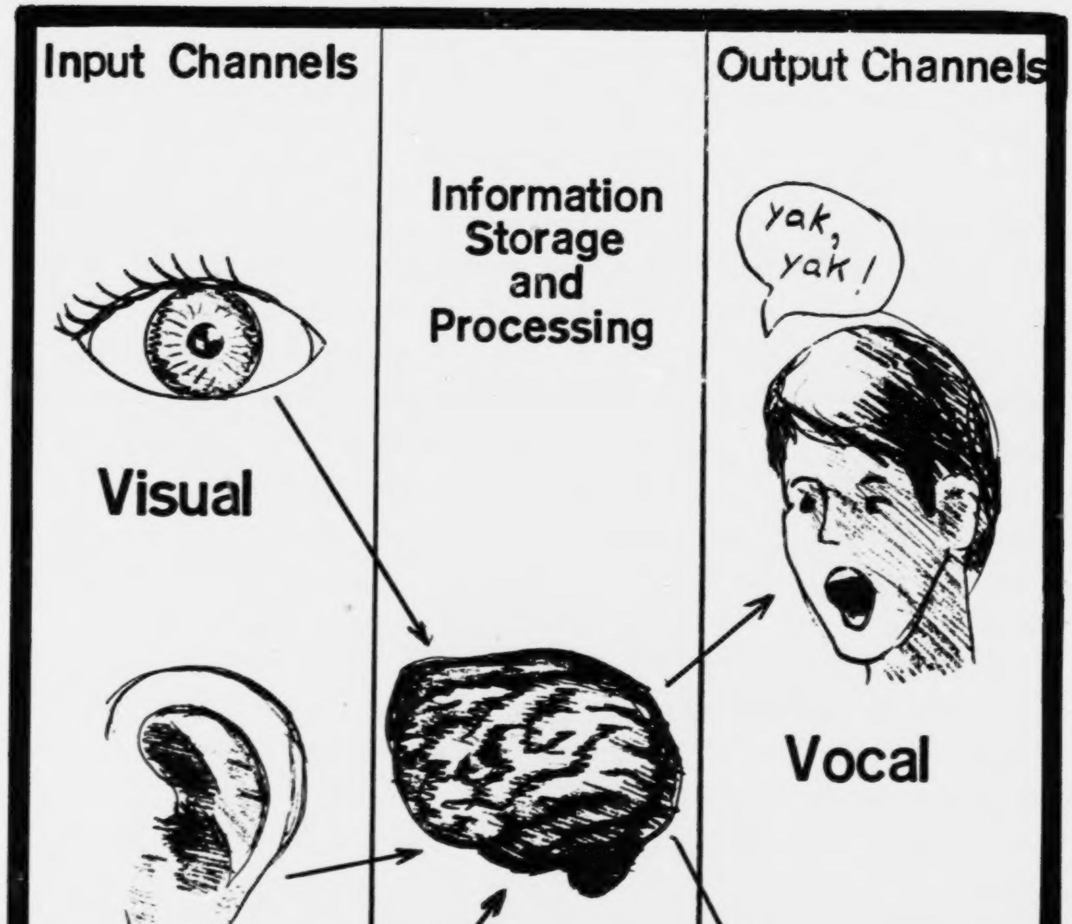

Input Channels
Information Storage and Processing
Output Channels
Visual
Auditory
Tactile
Brain
yak, yak!
Vocal
Motor

Plate 2.2

brain. Finally, responses can be made or activities initiated through the output units of vocal and motor. The three input channels of vision, hearing, and touch, are the ones most often used in the education of young children. In addition, the olfactory sense (smell) and the gustatory sense (taste) can be used to receive information or stimulation from outside the individual. Plate 2.3 is a conceptual or symbolic version of the model shown in Plate 2.2. Plate 2.4 combines the Information Processing Model with the model of the Perceptual Motor System (Smith, 1969). You will notice that a fourth component has been added: the monitor and feedback system. Each of the four components of the Information Processing Model will be described in detail.

Input or receptive component. Three main channels of input make up the receptive component: vision, hearing, and touch. It is through these three channels that the individual receives information from his environment. This receptive component extracts stimuli from the environment. The child must receive information or stimuli from his environment in order for him to learn about the environment. Consequently, the effectiveness with which children can obtain information from the environment depends to large extent on whether or not the receptive system is intact. The child who has a vision problem or a hearing problem may not receive all the necessary information from his environment, or the information he receives may be distorted.

A child who has visual problems cannot receive information through the visual channel as well as other children. Information that passes through the defective visual channel may reach the brain in an incomplete or inaccurate state. Consequently, the information processing unit, or the brain, will store or process incomplete or inaccurate information. It is difficult to say how a child will respond in certain situations when he has only incomplete or inaccurate information at his disposal. Thus, the Information Processing Model points out one potential handicap, visual problems, that can seriously interfere with a child's educational growth.

The second major input channel, hearing, is also called the auditory channel. Much of the learning that goes on in classrooms is dependent upon understanding language. The major source of language learning in young children is listening: listening to parents, friends, teachers, and television. Good hearing is required for rapid and normal language learning, following directions, learning to read, and many other important activities.

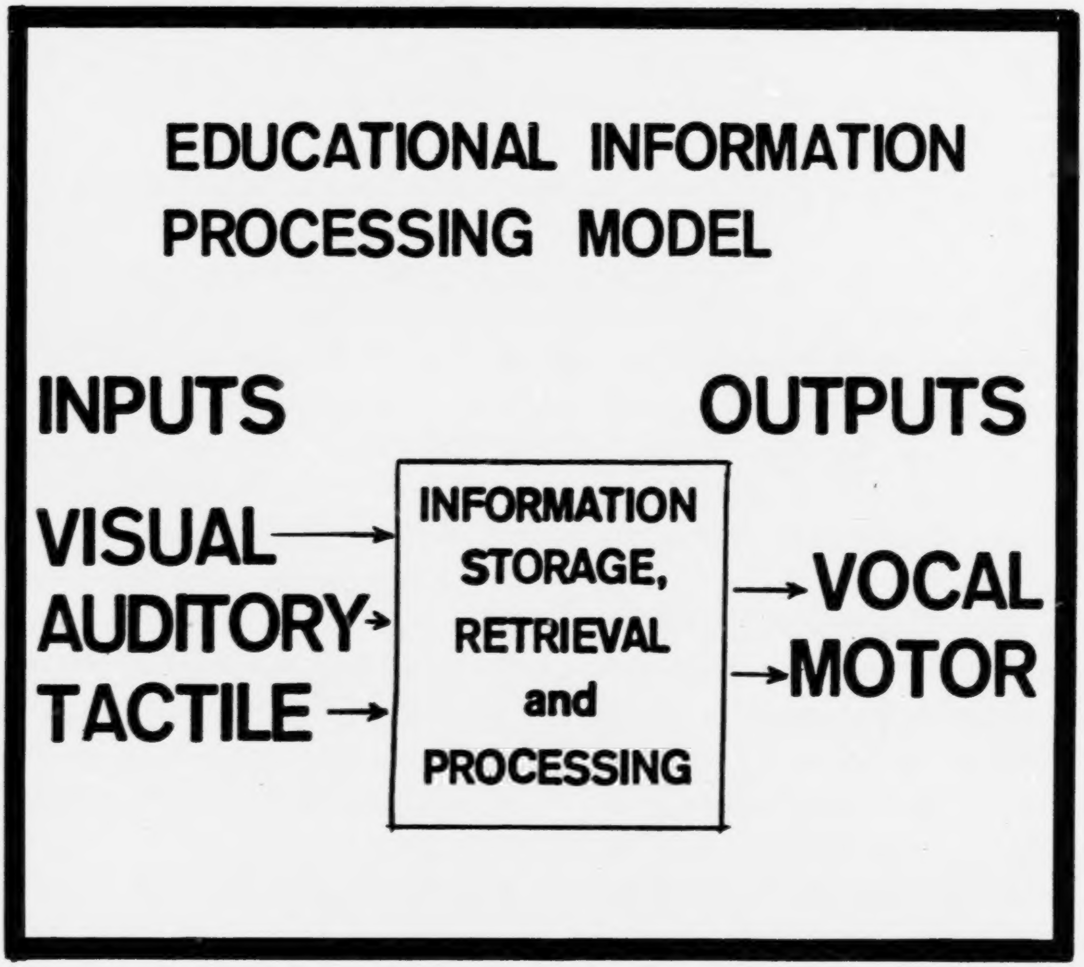

EDUCATIONAL INFORMATION PROCESSING MODEL
INPUTS
OUTPUTS
VISUAL
AUDITORY
TACTILE
INFORMATION STORAGE, RETRIEVAL and PROCESSING
VOCAL
MOTOR

Plate 2.3

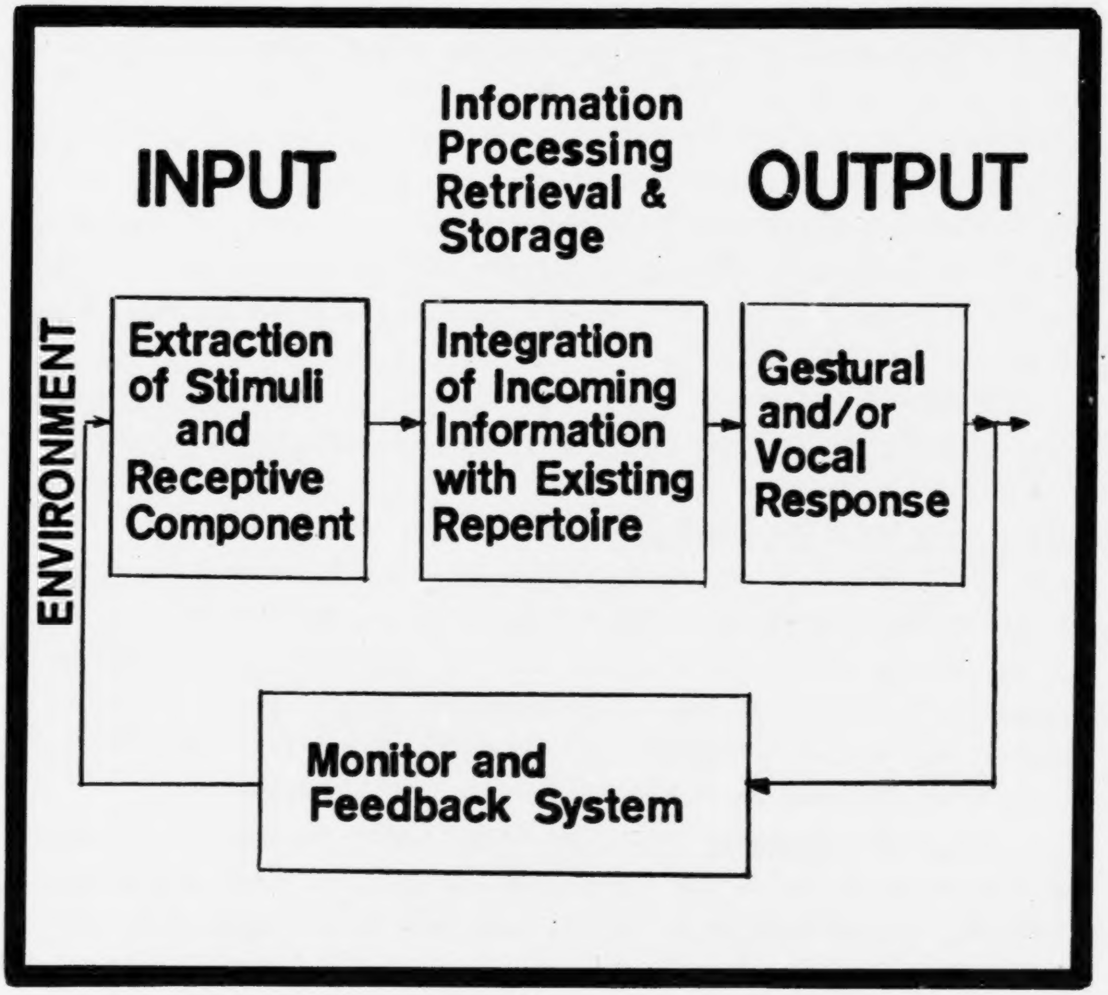

INPUT
Information Processing Retrieval & Storage
OUTPUT
ENVIRONMENT
Extraction of Stimuli and Receptive Component
Integration of Incoming Information with Existing Repertoire
Gestural and/or Vocal Response
Monitor and Feedback System

Plate 2.4

A child with a hearing problem probably will have difficulties in school unless he has special help. Hearing problems prevent important information from reaching the child. As is the case with defective vision, poor or defective hearing may distort important information. The child may process and store inaccurate or incomplete information. Poor speech often accompanies hearing problems because the child can not hear good speech; nor can he hear himself with sufficient accuracy to achieve satisfactory speech. Poor hearing prevents accurate information from reaching the brain; consequently, a speech problem may result.

The final input channel of concern is the tactile or haptic. We usually do not think of the sense of touch as an important channel for educational information. Think for a moment, though, about how difficult it would be to teach a young child the meaning of such words as rough, smooth, soft, furry, heavy, light, wet, dry, and so on, if the child did not have full control over his fingers, hands, arms and various large and small muscles.

In summary, visual, auditory, or physical (tactile) problems may distort information or prevent it from being accurately transmitted to the brain. The brain may receive incomplete or inaccurate information. The effect of the distorted information on behavior cannot be fully known.

Information processing unit. The second major component in the Information Processing System is the information storage, retrieval, and processing component. Some writers refer to this component as the associative unit. Its function is to receive information from the input channels, process the information in some manner, and store it for immediate or later use. The associative unit integrates incoming information with information that has already been stored. The brain is the central feature of this associative unit.

It is extremely difficult to pinpoint with any accuracy learning problems that are directly attributable to dysfunctioning or malfunctioning of the brain. For purposes of simplicity, we will limit the disorders associated with information processing to three: mental retardation, emotional disturbance, and learning disability. However, we will discuss also in great detail children with brain injury and perceptual-motor problems. Since it is not clear whether children with perceptual motor problems have problems primarily in input, processing or output channels, we will not attempt to force this category into the Information Processing Model. Furthermore, we shall also be discussing socially disadvantaged children in this book, but we will not attempt to attribute the phenomenon of social disadvantage to malfunctioning in any of the units of the Information Processing Model.

Children who have learning disabilities or perceptual motor problems represent an especially difficult case for the educator. One of the reasons is that it is impossible to link their problems directly to any one of the four components in the system that we are describing. Children who are "brain injured" or who have perceptual motor problems, have trouble extracting appropriate data from the environment. It is not clear whether the problem is in the input or in the associative units. We do know that they are distracted by irrelevant stimuli. They are often incapable of differentiating between what is relevant and what is irrelevant in a given situation. Consequently, they may attend to information which is not important to the task at hand. Many of these children have difficulty distinguishing between the central figure of a picture and the background, or distinguishing among colors, shapes, and sizes, or in extracting the teacher's voice from other extraneous sounds in the environment. The child who has problems extracting appropriate stimuli from the environment probably will have difficulty with the other components of the Information Processing System.

Output channel. The third component of the Information Processing Model is the output unit. It is through gestures, writing, and vocalization that the individual makes his needs known to the outside world. The speech of a child is a good clue to his progress toward maturity. We should, of course, differentiate between speech and language. Speech is a simple mechanical realization of a complex system of language. Similarly, hand writing or typewriting is a mechanical skill compared with the complex system of communication represented by language.

There are many different kinds of problems that can affect the motor abilities of a child. The most obvious are crippling conditions such as polio, or some types of cerebral palsy. Chronic health problems can also be a deterrent to success in school.

Monitor and feedback system. Some scientists add a fourth component to the preceding three; that is, in order for a child to learn effectively, he must continually monitor his own performance. It is a well-known psychological principle that effective learning is contingent upon feedback to the learner. The learner must be able to see how well he is doing in order to improve his performance. In actuality, this loop of feedback may be redundant. The child uses the input channel to monitor his own behavior. However, some children may not be able to extract the relevant information from the incoming stimuli and thus will not be able to monitor their own performance adequately.

Inferred and Observed Problems

Speech or vocalization and motor acts or gestural acts are actually the only components of the Information Processing System that we can actually see or observe. Speech and motor behaviors are observable acts or behaviors. We can actually see speech or motor problems, but we can only infer that a problem exists in the brain or in the input channels. We cannot look into a child's brain to see if he has a problem. We can infer that a child has a problem in information processing or in reception, but we base that inference on behavioral information that we obtain from observing the speech or motor activities of the child. Thus, speech and motor activities are the only two sources that can be used for behavioral information. We can infer that problems exist in the brain or in the input channels by carefully observing a child's outputs, or his responses in certain situations. In fact, most psychological testing is based on this principle. By carefully structuring input or stimuli to a child and then observing his responses, we can make judgments about the presence or absence of certain problems or conditions within the child.

Most of us have had the occasion to talk with someone who stuttered or had some other speech problem. The speech problem itself is a disadvantage in the modern, highly verbal classroom situation. We may not realize, however, that the speech problem may be indicative of other problems - hearing, for example. Speech and hearing problems will be examined in detail later on in this book, but keep the following ideas in mind: speech and motor activities are the only behaviors we can actually observe. By carefully observing what a child does in certain situations, and the manner in which he speaks, we may be able to infer a handicap in the input channel or in the information processing unit. In this instance, the speech problem may be indicative of the fact that the child has a hearing problem.

The key to the preceding discussion of observed and inferred information is illustrated in the complete Educational Information Processing Model shown in Plate 2.5. The input units and the information processing units are to the left of the wavy line. Problems dealing with those two units must be inferred

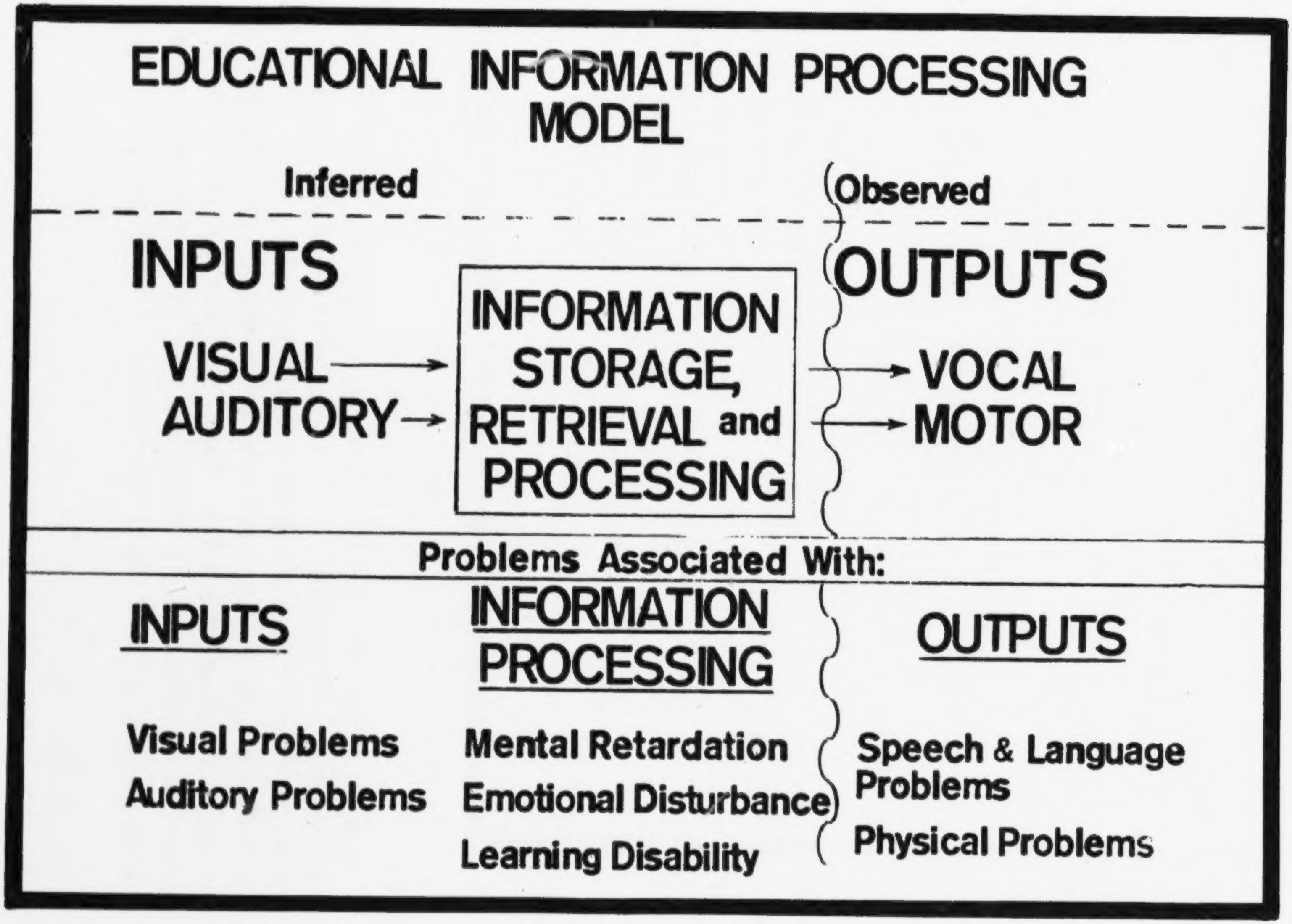
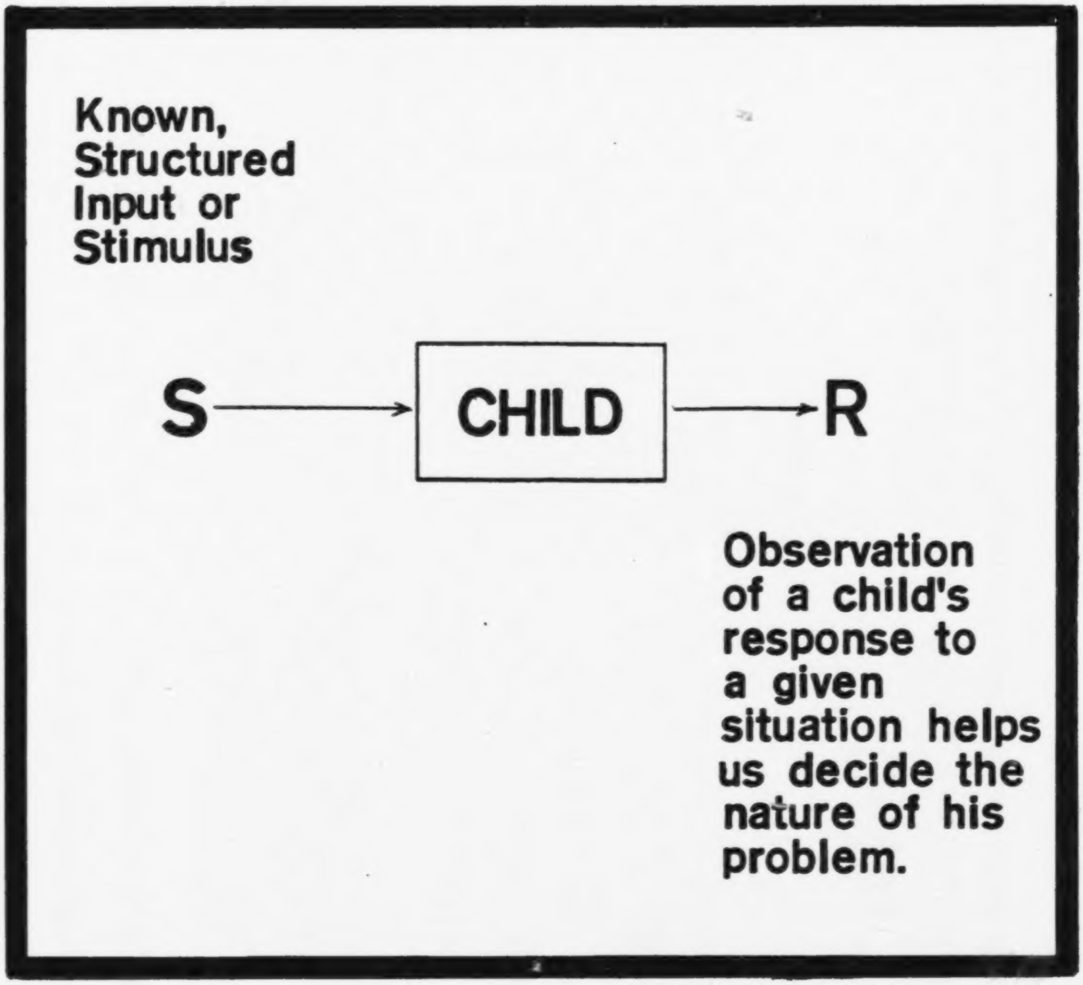

EDUCATIONAL INFORMATION PROCESSING MODEL
Inferred
Observed
INPUTS
VISUAL
AUDITORY
INFORMATION STORAGE, RETRIEVAL and PROCESSING
OUTPUTS
VOCAL
MOTOR
Problems Associated With:
INPUTS
Visual Problems
Auditory Problems
INFORMATION PROCESSING
Mental Retardation
Emotional Disturbance
Learning Disability
OUTPUTS
Speech & Language Problems
Physical Problems

Plate 2.5



Known,
Structured
Input or
Stimulus

Observation
of a child's
response to
a given
situation helps
us decide the
nature of his
problem.

Plate 2.6

on the basis of observed behavior. Problems on the right side of the wavy line can actually be observed. Plate 2.6 summarizes the second major point: in order to obtain information about a child's problems, it is necessary to give the child known or structured information and to observe the child's response to the known information. Again, the important idea is that an observer can see only speech or motor activities of a child, and must infer problems in other parts of the information processing system.

Summary of Educational Information Processing System

The complete Educational Information Processing System and problems associated with it are summarized in Plate 2.5. The model illustrates that all of the various components are important for adequate progress in school. Each of the components is susceptible to one or more problems or combinations of problems. The primary problems of input reside in vision problems and auditory problems.

Problems associated with information processing, storage, and retrieval are the most difficult to identify accurately and are the most difficult to remediate. It will be pointed out in later sections that there is a great deal of overlap between the different conditions that can affect information processing. For purposes of simplicity in this model, mental retardation, emotional disturbance, and learning disability, are regarded as the primary problems affecting information storage, retrieval, and processing. More complex problems such as perceptual motor problems, brain injury, and possibly social disadvantage, overlap all components of the Information Processing System.

Finally, speech problems can be a handicap to a child as is pointed out in the section of the model related to outputs. Physical problems which may be a problem to the child are physical disabilities and chronic health conditions.

The Educational Information Processing System should provide you with a frame of reference which is shared by most professionals who work with handicapped children. There are differences of opinion about the utility of the system, but most professionals use the same terms and categories that are found in the system. Plate 2.7 indicates the prefered term and other terms that might be used for each of the disabilities covered in the Information Processing Model.

In summary, for a child to be successful in school he must be able to receive information, process the information, and be able to initiate activities related to the information. Poor school performance is probably due to problems associated with inputs, outputs, or information processing.

Common and Synonymous Terms for Disabilities

Associated Component	Preferred Term	Other Terms
Problems associated with the input or receptive component	Vision problems	Blind Partially sighted Partially seeing Partially blind Visually limited Visually impaired
	Auditory problems	Deaf Hard of Hearing
Problems associated with information processing, storage, and retrieval	Mental retardation (Note: additional terms will be covered in the section on mental retardation.)	Mentally handicapped
	Emotional disturbance	Mentally ill Socially maladjusted
Problems associated with outputs	Speech problems	Speech defect Speech impaired Communication disorder
	Physical problems	Physical handicap Motor disorder Chronic health problems Crippled Physically disabled

Plate 2.7

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Chapter 3

INTERRELATIONSHIPS OF HANDICAPS*

The previous chapters introduced the idea that only observable behaviors can be used as reliable indicators of children's problems. This theme will be stressed throughout this handbook.

Three major points are made in this chapter:

1. Identical behaviors may be found in children with different disabilities.
2. A disability may produce different behaviors in different children.
3. Handicapped children often have related handicaps or problems.

The first two points listed above should serve as a caution: avoid labeling a child as having a certain disability because he exhibits a trait associated with that disability.

As an example, consider the problem of hyperactivity in children. The hyperactive child is fidgety, often out of his seat, highly distractible, and finds it hard to concentrate for very long. He often seems to be unable to focus on relevant stimuli and is distracted by irrelevant details.

It is a popular belief that brain injury is the cause of hyperactivity. Furthermore, it is also a popular belief that hyperactivity is a reliable and valid indicator of brain injury. Unfortunately, there is little good scientific evidence to support these misconceptions. Many hyperactive children show no neurological evidence of brain injury. Also, many brain-injured children are not hyperactive. There are indications that certain forms of brain injury may be related to hypoactivity, which is just the opposite of hyperactivity. There is also evidence which indicates that brain injury may be the cause of certain forms of mental retardation, blindness, deafness, cerebral pasly, epilepsy, and other disabilities. However, other factors in addition to brain injury may cause the disabilities just listed. Consequently, it is often impossible to identify a specific cause and effect relationship between brain injury and hyperactivity or other disabilities.

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*The CAI version of this chapter was written by Professor G. Phillip Cartwright.

Major Points of Chapter 3

1. Identical behaviors may be found in children with different disabilities.
2. The same disability may produce different behaviors in different children.
3. Handicapped children often have related handicaps or problems.

Plate 3.1

Thus, the first two points listed above are virtually inextricably interwoven. It is extremely difficult to indicate with precision a cause and effect relationship between such factors as brain injury and hyperactivity. Plate 3.2 indicates that brain injury may result in a number of different conditions such as mental retardation, hyperactivity, hypoactivity, blindness, and cerebral palsy.

CAUSE	EFFECT
Brain Injury	Mental retardation Hyperactivity Hypoactivity Blindness Cerebral palsy

Plate 3.2

Similarly, identical behaviors may be found in children with different disabilities. That is, children who are emotionally disturbed or mentally retarded may exhibit the same behaviors. However, the behaviors may be the results of very different mechanisms and causes. Taking one set of behaviors, it would not be possible to make a firm and accurate diagnosis of the etiology of the condition. Plate 3.3 may help to point out the fact that different disabilities may have similar associated behaviors.

The third major point to be made in this chapter is that handicapped children often have related handicaps or problems. This statement is especially true with more severely handicapped children. It seems to be the case that the more severe a given disability, the more likely additional disabilities or problems will be present. Severe mental retardation with IQ less than 30 is almost always accompanied by some physical problem. Moderately handicapped children often have related problems. It is almost inevitable that handicapped children will feel a certain amount of frustration when they are unable to compete with their more normal peers in certain activities. The

DISABILITY	SYMPTOM
Mental retardation	Hyperactivity Poor school achievement Not well liked by others
Emotional disturbance	Hyperactivity Poor school achievement Not well liked by others

Plate 3.3

frustration may lead to a characteristic style of behavior and may lead to additional emotional problems. Plate 3.4 illustrates how one disability may result in handicaps in other areas.

The physically handicapped child may be unable to compete in certain highly valued physical activities such as baseball during recess. His normal peers may place a high value on this activity and spend free time talking baseball and playing baseball. The handicapped child may become frustrated

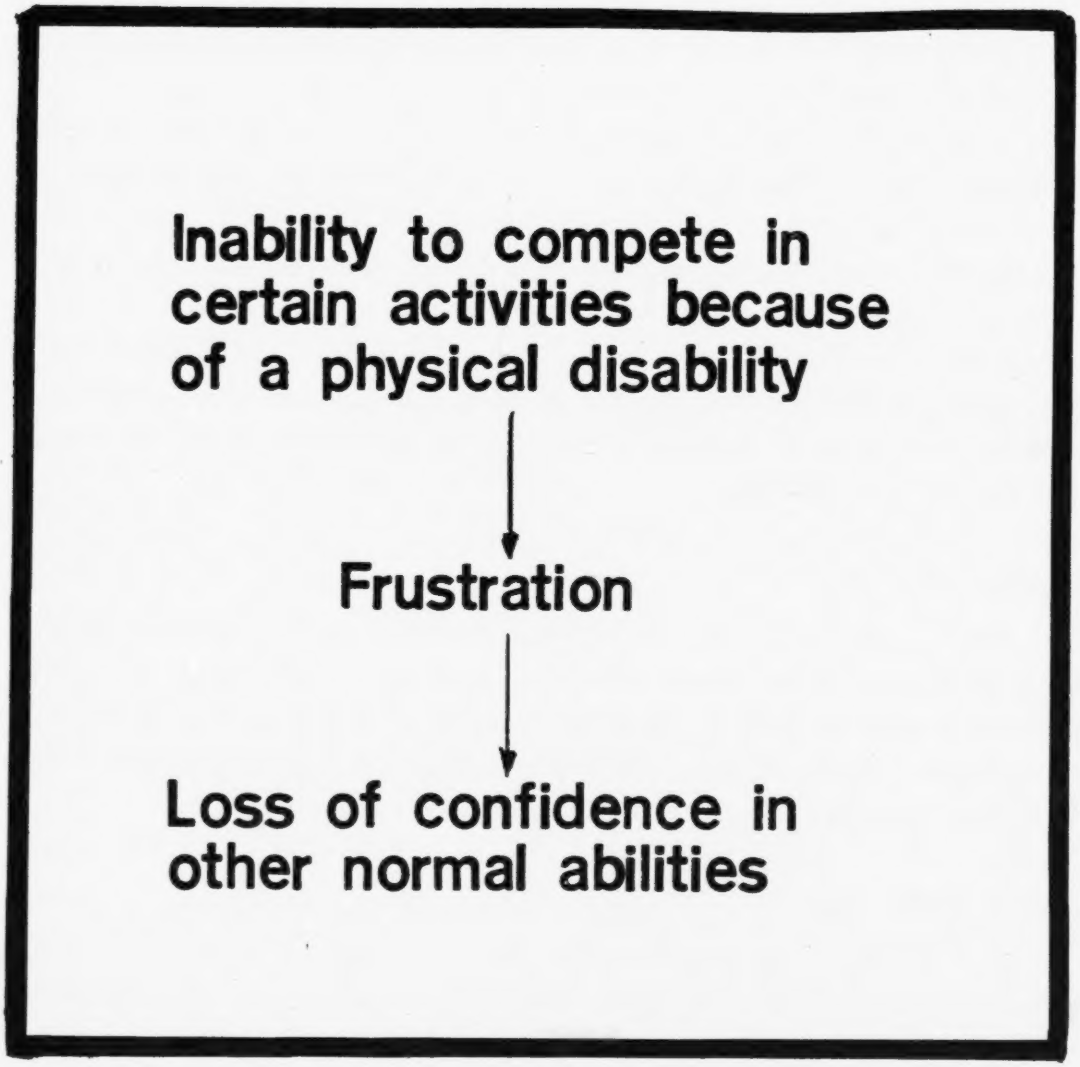
Inability to compete in certain activities because of a physical disability
Frustration
Loss of confidence in other normal abilities

Plate 3.4

because of his lack of ability to play baseball. The frustration may become generalized and result in a loss of confidence in other normal abilities that the child may have.

We have stated that identical behaviors may be the result of different disabilities. The third point is intimately related to the first two points stressed in this chapter. There often is a great deal of overlap between disabilities and many different behaviors may be the result of a single disability. Again, caution must be exercised before assuming that a child has a certain disability just because he exhibits one or more symptoms of that disability. There is such a great deal of overlapping of symptoms from different disabilities that psychologists and physicians often have a difficult time accurately diagnosing a given problem.

In some cases, such as mental retardation and emotional disturbance, the resulting behaviors may in fact be due to a third factor such as brain injury. Brain injury may produce some forms of mental illness and some forms of mental retardation. Most educational personnel do not have the training to make diagnoses about mental retardation or distinctions between mental retardation attributable to disease, brain injury, or cultural-familial conditions. It is much more fruitful for the educator to deal with the specific behaviors that he wishes to change or improve rather than to conjecture about the supposed etiology of the condition.

Example Number One

John S. was born with a club foot. Although early surgery helped, at age 9 John is a little clumsy and cannot keep up with his peers in sports. Although his school work is above average, he is not popular with his peers or his teachers because of his inappropriate behavior. In a word, he is a pest! He fights, pinches, and makes others unhappy in a variety of ways.

Example Number Two

Bill T. acts a lot like John S. Bill is always in trouble and seems to go out of his way to pick a fight. He is not popular with his classmates because of inappropriate behavior. He is not physically handicapped and is a fair athletic competitor. Tests show that he is quite far behind his peers in school. In fact, he will be placed in a special class for slow learners as soon as possible.

Example Number Three

In the discussion of brain injury it was noted that brain injury could be responsible for such diverse problems as hyperactivity, mental retardation, blindness, and deafness.

Example Number Four

You recall that Bill T. is an aggressive child and is always fighting. The major source of his problems may be the fact that his mental retardation or slow learning ability prevents him from keeping up with his peers in school and the aggressive behavior is an attempt to gain some status in an area unrelated to academics. Mary W. is also mentally retarded but her behavior is different. She is shy and withdrawn. She never participates in class because she is so far behind the other children. She has a few friends her own age but she is more relaxed with younger children.

Caution Against Over-generalization and Over-simplification

Many of the examples and the concepts presented up to this point have been drastically simplified for the purposes of information and teaching. This procedure will be followed throughout the course when it is necessary to do so. In real life, other factors would be important as well as the ones that we have stressed. For example, the child's environment could be the real cause of his aggression or shyness, not mental retardation alone. Occasionally we may be guilty of making inferences about causation that are on pretty shaky grounds. However, we will continue to do so when it is necessary to make a point.

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Interrelationship of Handicaps

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Chapter 4

DECISION PROCESS*

The purpose of this course is to provide information which will enable educators to make decisions about children who have (or who may have) educational problems. There are a number of different decisions which educators must make about children. The decision process (Plate 4.1) represents a series of tasks designed to help educational personnel make decisions about children in a logical, systematic manner.

Components of the Decision Process

The first task in the decision process is to survey all children in order to identify: 1) any children who are experiencing problems which interfere with educational progress; and 2) any children who display behavioral signs indicative of potential interference with educational progress. The task required for the identification of these children is illustrated in step number 2 of the decision process; the decision to be made regarding identification is illustrated in step number 3 of the decision process.

Step number 2 in the decision process indicates that educators should be continually gathering information about children and evaluating all of the children in their care. Periodically the information obtained to date for each child should be reviewed and the question, "Are there any children who deviate considerably from normal expectations?" should be answered.

A variety of information is used to determine whether any children have deviations. The results of standardized achievement, mental ability, and readiness tests can be considered. The use of standardized test results for screening is described in detail later in this handbook. Results yielded by administering other published instruments such as rating scales and inventories can also be used for screening. In addition, information obtained through the use of teacher-made evaluation instruments can be used to screen out children with deviations. In general, data gathered through the use of a variety of evaluation procedures should be considered for screening.

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*The CAI version of this chapter was written by Professor Carol A. Cartwright.

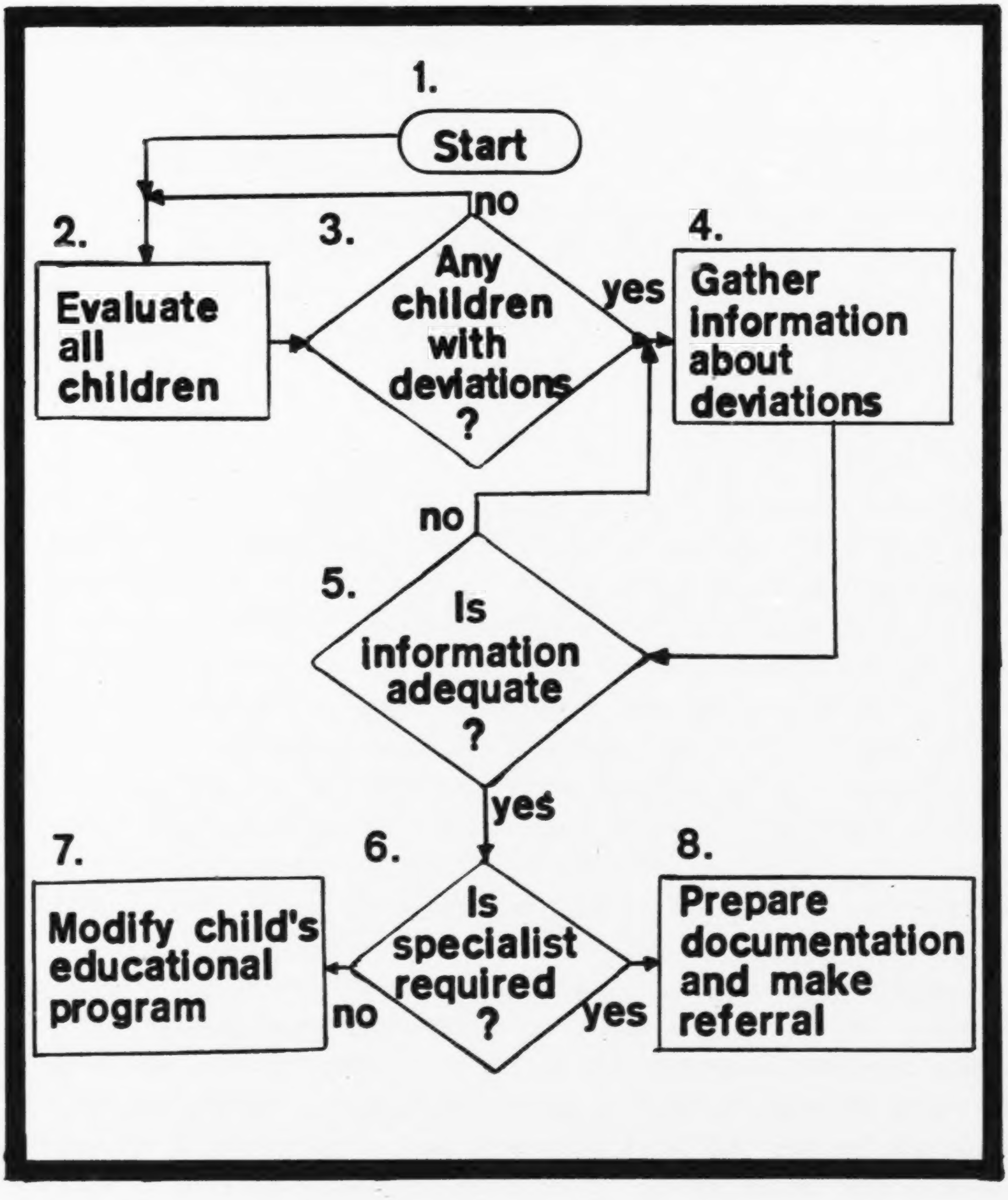
1.
Start
2.
Evaluate all children
3.
Any children with deviations ?
no
yes
4.
Gather information about deviations
no
5.
Is information adequate ?
yes
6.
Is specialist required ?
7.
Modify child's educational program
no
yes
8.
Prepare documentation and make referral

Plate 4.1

Educators are able to determine if children have deviations because they also have knowledge about normal development for children. In addition, educators understand the phenomenon of individual differences, and they realize that no child in the class will be completely average or normal. Many children will exhibit differences from normal development, but for most of the children, the differences will be within a normal range.

If the answer to the question, "Are there any children with deviations?" is negative, the evaluation of all children simply continues. The cyclical nature of the decision process is illustrated by the arrow which points back to step number 2 if the answer to the question at step number 3 is negative.

If the answer to the question posed as step number 3 is affirmative, then it is said that a child has been screened out of the total group for further diagnosis. Therefore for a "yes" answer to the question the arrow points ahead to step number 4 and the task of diagnosis.

Step number 4 of the decision process is concerned with diagnosis of an individual child's specific strengths and weaknesses. Remember that only a few of the children in a group will be screened out for further diagnosis at any given time. The reason for screening the child out of the total group in the first place provides a starting place for the diagnostic process at step 4. Different evaluation procedures will be administered to a child depending on why he was screened out from the group.

It is important for the teacher to get a complete picture of the child. Various sources of information are available and should be taken advantage of. The child himself is a source of information. A variety of tests, either published or teacher-made, can be administered to the child in order to gather more specific information about his various abilities. Another possibility is for the teacher to set up certain situations and observe the child's responses. For example, a teacher may be concerned about a child's hearing acuity. The situations he might set up would be as follows: 1) he could change the child's seat to various areas of the classroom and observe the child's reaction to these new seating arrangements; 2) he could speak to the child from a variety of differences and observe his reaction in these situations; or 3) he could observe the child's facial expressions as the child is listening to a speaker. Of course, it is important for the teacher to keep a careful record of the results of these observations.

We have mentioned that the child himself is a source of information, and we have illustrated several ways in which information could be gathered directly from the child. There are others who may also provide information about the child for the diagnosis in step 4. The other children in the class could provide information about the child. For example, if a teacher is interested in a child's social abilities he might use a sociometric procedure and determine how the child fits into the various social groups in work and play situations within the classroom. The child's family, especially his parents, are another source of information for diagnosis. It is important for the teacher to check to see whether the kinds of behaviors that the child is exhibiting in the classroom are also being displayed in home and neighborhood situations.

At some point in this diagnostic process the teacher will have collected a considerable amount of information, and he must now stop and ask himself the question posed at step 5 of the decision process. The question posed at step 5 has to do with the adequacy of the information obtained. Notice that a "no" answer to the question results in a return to step 4 so that even more information can be gathered about the child's deviations. A "no" answer to the question at step 5, and the accompanying return to data collection at step 4 is based on the assumption that the teacher is able to get the needed information. It is possible that more information is needed, but that the teacher is not qualified to obtain it. In this case, when more information is needed, but when the teacher is unable to gather the information, it would be necessary to make a referral to a specialist.

If the teacher decides that he does have enough information to make a decision about the child he moves to step 6 of the decision process and responds to another question. At step 6 of the decision process, the teacher asks himself, "Is a specialist required for this child?" Regardless of the answer to the question at step 6, the teacher will make use of the diagnostic information which has been gathered at step 4 of the decision process. If the teacher decides that a specialist is not required, then he uses the diagnostic information he has gathered as a set of guidelines to modify the child's educational program. If, on the other hand, the teacher decides that a specialist is required, he uses the diagnostic information he has gathered to prepare a referral statement for the specialist. A detailed look at the task of preparing documentation and making referrals is discussed in Chapter 21 of this handbook. Also in Chapter 21 a form which might be used to prepare the documentation and send information to the specialist is presented and discussed.

It is important to note that even if the decision is to refer the child to a specialist, the teacher will not receive feedback from the specialist immediately, and the teacher will need to move ahead and do some modifying of the child's educational program. In some instances, a teacher will decide that a specialist is not required, and will begin modification of the child's educational program. Then, at some future date, the teacher may decide that the information is no longer adequate and that the modifications of the child's educational program are not proceeding as well as is expected. In this case, the teacher might reconsider the adequacy of the information available to him, and decide that a specialist is now required for some further and more intensive diagnosis of the child.

One final remark is necessary. While the teacher was pursuing the collection of diagnostic information for one child, he did not neglect his periodic survey of the other children in the class.

At some time while the teacher was involved in the diagnosis of one child, he probably screened another, different child, because he suspected a problem. After screening out the other child he would engage in a specific diagnosis of that child, while he was still engaged in the diagnosis of the first child, and so forth. The decision process is a continuous and circular process. The teacher will be operating at various steps of the decision process, and carrying out various tasks for different children, at different times during the school year.

Summary of the Decision Process

A teacher continually surveys the data for the total group in order to screen out those children with deviations.

The children who have deviations are then involved in diagnosis.

On the basis of data gathered in diagnosis, a decision is made to either modify the child's educational program or to refer the child to a specialist for more intensive diagnosis.

CHAPTER 5

GATHERING INFORMATION ABOUT CHILDREN*

Some basic ideas about data collection are presented in this chapter. A detailed description of a variety of evaluation procedures and guidelines for selecting appropriate procedures for evaluating children's behaviors are also included.

Quantitative and Qualitative Information

Children differ from each other in many ways. It is the responsibility of the teacher to use educationally relevant differences in children as an aid in helping each of the children achieve to the best of his ability in school. Two types of information are available to teachers to help them make decisions about educationally relevant strengths and weaknesses. The types of information are quantitative and qualitative information.

Quantitative (or numerical) information is meaningful when it is compared to some standards. International standards have been established for such informational units as inch, foot, meter, yard, etc. An example of quantitative information is the use of a standard yard stick or tape measure to determine that a child is 51 inches tall. The number 51 is meaningful because the inch to which it is applied is the same for all persons who use that unit of measurement.

Sometimes it is necessary to get information about a child even though it is not possible to quantify the characteristic in which we are interested. In this case we might use qualitative, or categorical, information. Examples of qualitative (non-numerical) information are, "Mary is able to stay in her seat during reading class," or "Billy seems to be a better fielder than batter in softball."

Observable Behavior

Regardless of the type of information obtained, quantitative or qualitative, it is essential that the information be as accurate as possible. Accuracy can be increased by recording only what is actually observed and not what is inferred. If an inference is made it should be labeled as such, and the inference should be based on behaviors which were observed. It is best not to make guesses about a process that might be occurring within a child, but report the child's actual observable behavior. For example, it is better to say, "Johnny usually does not play with the other boys and girls at recess time," than to say "John is emotionally insecure and withdrawn."

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*The CAI version of this chapter was written by Professor Carol A. Cartwright.

Behavior is something that can actually be seen. It is not a judgment about the appropriateness or the suitability of a particular act. Behavior is an observable act or incident that can be reported by different people with a great deal of agreement. When we say that a child is thinking hard about a problem, what we are really doing is summarizing behavioral data such as: "the child is sitting quietly in his seat and frowning or making other facial or body movements which have become associated with the act of 'concentration'." Most teachers have seen this "act" put on by children who have no idea of the right answer but are going through the motions of looking as if they are trying to figure out the right answer.

Collecting Behavioral Information

It is essential that teachers report suspected problems in children in terms of specific observable behaviors and not in terms of vague generalities. However, one behavior taken by itself will usually not be indicative of a particular problem. As a child exhibits behaviors, he provides the observer with concrete information about complex processes that might be occurring within him. Behaviors are signs; they point to processes or conditions within a child. The more signs there are, the more able we are to make a legitimate inference. Plate 5.1 illustrates several signs or behaviors that point to the conclusion that the child likes reading. Each of the signs is a specific behavior that can be observed with accuracy.

Gathering information by describing behaviors quantitatively or qualitatively is one very important step in deciding whether or not a child has an educational problem. When we make value judgments about a child's performance of a behavior, we are evaluating the performance of the child. In other words, the comparison of a child's behavior with some criterion and the value judgment which is made about the child's performance constitutes evaluation.

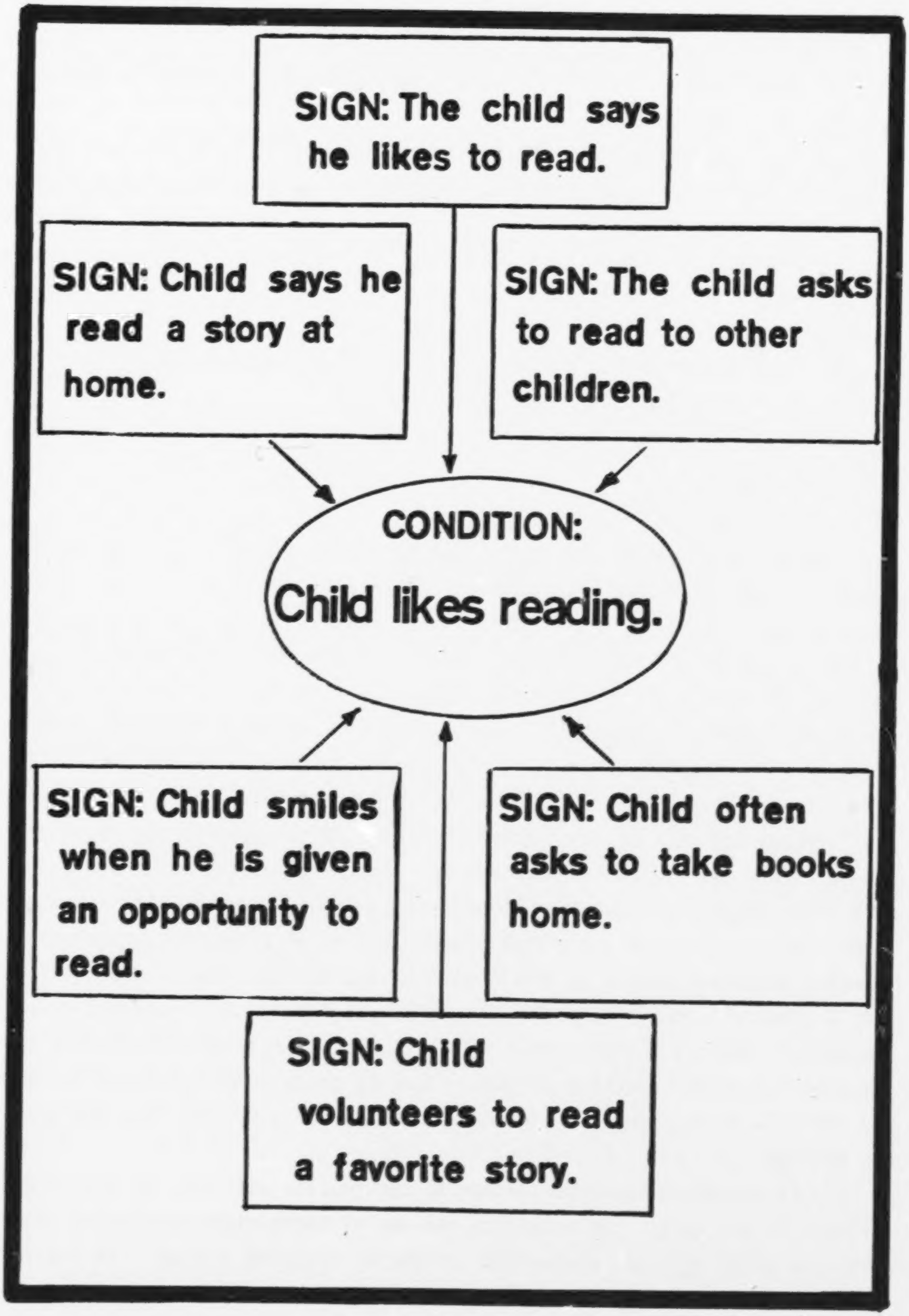

SIGN: The child says he likes to read.
SIGN: Child says he read a story at home.
SIGN: The child asks to read to other children.
CONDITION:
Child likes reading.
SIGN: Child smiles when he is given an opportunity to read.
SIGN: Child often asks to take books home.
SIGN: Child volunteers to read a favorite story.

Plate 5.1

Important Points

1. Quantitative (numerical) information about children can be obtained for some characteristics.

2. Qualitative (non-numerical) information can be obtained about children. Qualitative information is not as precise as numerical information, but it is useful information.

3. Children should be described according to the way they actually behave. The most accurate and objective statements are those which include specific observable behaviors as descriptors of children's activities.

4. Inferences can be made about a child's problems more accurately if the inferences are based on observable behaviors.

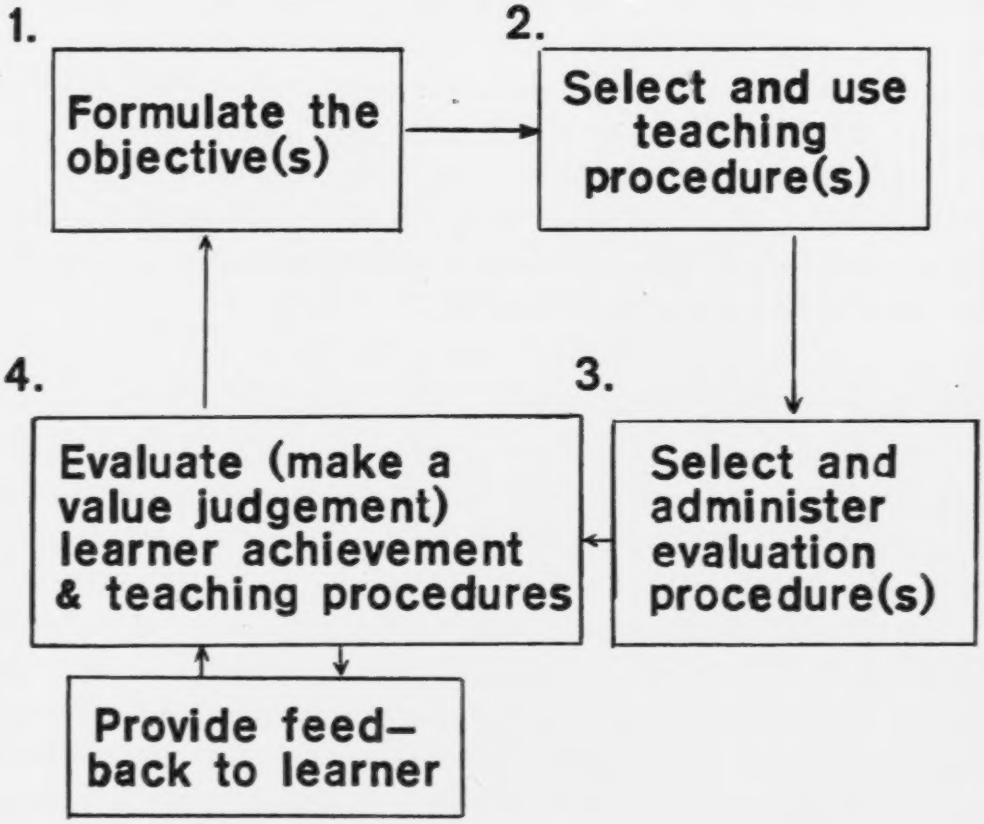
Evaluation in the Teaching-Learning Process

The teaching-learning process is symbolized in plate 5.2. This process is a circular one; it is one that should be never-ending for the teacher. One of the most important aspects of the teaching-learning process is the formulation of the objectives. It is obviously necessary for the teacher to decide what he is going to teach a child before he begins to teach, or even before he plans how he will teach, the child. Consequently, the specific statement of objectives is very important in the total process. Objectives should be stated in terms of the behavior the child is expected to perform as a result of the lesson.

Perhaps too much emphasis has been placed in the past on the second step: selection and use of teaching procedures. Teaching procedures should be selected only after objectives have been formulated and stated precisely in behavioral terms. Once objectives are stated, the selection of a teaching procedure and teaching materials should be fairly routine and perhaps even somewhat automatic. Many beginning teachers make the mistake of placing too much emphasis on materials and methods and are lulled into a false security by relying on commercially prepared "cookbook" teaching methods. Some of these popular methods and materials may actually be teaching the children something far different than the teacher has in mind.

It is incumbent upon the teacher to continually evaluate the performance of children in his care. The selection and use of appropriate evaluation procedures has often not been emphasized in teacher training courses. It should be obvious that if a child is expected to learn something, then the results of the

TEACHING–LEARNING PROCESS



1. Formulate the objective(s)

2. Select and use teaching procedure(s)

3. Select and administer evaluation procedure(s)

4. Evaluate (make a value judgement) learner achievement & teaching procedures

Provide feed–back to learner

A CIRCULAR PROCESS

Plate 5.2

learning should be the child's ability to perform the behavior he was to learn. Evaluation procedures (Plate 5.3) are designed to collect information about the behaviors children can display. However, the evaluation instruments alone are necessary but not sufficient components of the evaluation process. The teacher must make a value judgment about whether or not the child's performance is satisfactory. He must be able to answer the question, "Did the child display the behavior called for in the objective?". Steps 3 and 4 in the teaching-learning process (Plate 5.2) symbolize both the selection and administration of evaluation procedures and the importance of teacher judgment in the evaluation process. Also shown at this point is the importance of providing feedback to the learner. The learner must know how well he is doing in order to improve his performance from then on. Finally, information learned from evaluation procedures is taken back and used to formulate new objectives for the child or for the children in a given situation.

Planned and Incidental Evaluation

Teachers should make use of both planned and incidental opportunities for data collection. For our purposes, planned evaluation procedures are those situations in which the stimuli for eliciting behaviors are arranged in advance. The administration of a test is an example of a planned evaluation procedure. Incidental evaluation procedures are those situations which yield information which was not planned for in advance. Planned evaluation is most prevalent in schools. A great deal of valuable information is yielded by incidental evaluations. An example of incidental evaluation is: a teacher is walking into the school building in the morning and notices two boys fighting in the playground; the teacher records this observation in the boys' anecdotal records. In general, teachers do not take advantage of the information from incidental evaluation as well as they might.

Selecting Appropriate Evaluation Procedures

Evaluation procedures should be selected so as to achieve a good "match" with the behaviors stated in the objectives. The behavior the child is supposed to exhibit as a result of a learning experience is what is to be evaluated. A detailed description and examples of various evaluation procedures follow.

PEER APPRAISAL AND SELF-REPORT TECHNIQUES

- Interview
- Questionairre
- Sociometric Techniques

TEST ITEMS

- Supply
- Selection
  - Alternative-response
  - Matching
  - Multiple choice
- Interpretive Exercise
- Essay

OBSERVATIONAL TECHNIQUES

- Checklist
- Rating Scale
- Anecdotal Record

Plate 5.3

Evaluation Procedures

I. Tests

Strictly defined, a test is a crucial trial or a performance on which a decision rests. Most people in education think of tests as formal evaluation devices, usually of the paper-pencil variety. Scores on these tests derive their meaning from the fact that they are administered in a specifically described standard way. The performance of an individual is scored in a particular way, and then compared with the performance of a standard group. The scores of the latter when organized properly are called norms. The products of the whole careful process are called standardized tests.

There are, of course, many other kinds of tests, particularly those informal measures of physical functioning. We are ordinarily satisfied with less formal measures when dealing with individual children, than when we are comparing groups in research settings.

A. Aptitude tests are designed to measure a student's capacity or potential for performing particular tasks or to predict his success in the task. Tests measuring scholastic aptitude, which may be conceived of as measures of learning ability, are often termed intelligence tests or general aptitude tests. Aptitude tests which are designed to predict a pupil's success in performing one particular task, such as learning arithmetic or playing a musical instrument, are called specific aptitude tests. Readiness tests are special types of aptitude tests which attempt to determine whether a pupil is mentally and physically able to benefit from instruction in a particular activity.

Virtually all aptitude tests are standardized. They may be designed to be administered to a group of students or they may be designed to be given individually to one student at a time. The latter type of general aptitude test is thought to provide a more accurate estimate of the learning ability of one particular child and is usually given only to those students whom the classroom teacher feels should receive a more accurate measure than is obtained from a group test.

Aptitude and readiness tests which are individually administered require special skills and training to administer and interpret, and thus are usually not administered by the classroom teacher but by a school psychologist or counselor. For this reason, examples of individual aptitude tests have not been included in this handbook, but some tests which are very often used are described.

1. Examples of individually administered intelligence tests:

a. Stanford-Binet Intelligence Scale. The Stanford-Binet is the oldest of the intelligence tests. It consists of groups of verbal and performance items at each age level from 2 years to superior adult. For each age group, the test contains 6 items and 1 alternate. Varying credit is given for passing each item. A mental age (MA) and an IQ are obtained from the pupil's performance on the test. The Stanford-Binet usually takes from 45-60 minutes to administer.

b. Wechsler Intelligence Scale for Children (WISC). The WISC consists of six verbal and 5 performance subtests and an optional supplementary subtest for each of the verbal and performance scales. The WISC yields a Verbal IQ, Performance IQ and a Full Scale IQ. It is appropriate for children from 5 to 15 and takes from 40-60 minutes to administer.

c. Wechsler Preschool and Primary Scale of Intelligence (WPPSI). The WPPSI is an extension of the WISC. It consists of eleven tests, six Verbal and five Performance. The WPPSI yields a Verbal IQ, a Performance IQ, and a Full Scale IQ. It is appropriate for children from 4 to 6-1/2 years of age.

2. Examples of group general aptitude tests:
   a. Otis Quick-Scoring Mental Ability Test
   b. California Test of Mental Maturity
3. Examples of group readiness tests:
   a. Gates Reading Readiness Test
   b. Metropolitan Readiness Tests
4. Examples of individual readiness tests:
   a. Anton Brenner Developmental Gestalt Test of School Readiness
   b. Reading Prognosis Test

B. Achievement tests are designed to measure how much a pupil has accomplished in a particular subject up to the present time or how much he "knows" about a given area of the curriculum. The test may measure achievement in a very broad or general area such as "academic achievement to the fifth grade level" or it may cover a very specific segment of subject matter such as "ability to perform long division." Tests measuring achievement in a broad area or measuring knowledge of a specific unit of instruction are commonly devised by teachers to suit the needs of their own particular classes. Both standardized and teacher-devised achievement tests are usually designed to be administered to groups of children.

Standardized achievement tests are often composed of a battery of subtests so that achievement scores are obtained for more specific areas of subject matter as well as the total score for the overall level of achievement. An achievement battery may, for example, yield scores of reading comprehension, vocabulary, numerical ability, knowledge of American history, etc. The standardized achievement test, having been through the standardization process, can be used to compare the scores of any pupils who have taken the test with performance of the norm group.

1. Examples of standardized achievement tests:
    a. Metropolitan Achievement Tests
    b. Iowa Tests of Basic Skills
    c. Stanford Achievement Tests

C. Teacher-devised achievement tests give the teacher an opportunity to measure the extent of her student's knowledge before or after the presentation of a "unit" of the curriculum. Such tests, of course, may be used only to compare the performance of pupils in that particular situation. The behaviors specified in the objectives provide guidelines about the type of items to use in the construction of a test.

1. Supply items

A test consisting of supply type items is commonly called a completion test. Such a test requires the students to produce a written response to complete a sentence or to answer a question. The required response is usually a short phrase of one or several words (or numbers or symbols).

Supply items are usually considered to measure recall of information that has been stored in memory. They may also measure some simple or complex problem-solving skills or arithmetic computation ability, as when the student is presented a problem to which he must supply an answer.

Items requiring the production of an answer reduce the possibility that the student will answer correctly by guessing. Supply items are fairly easy to construct, although care must be taken that the statement to be completed, or question to be answered, is clear and unambiguous as to the type of response it calls for (i.e., date, place, quantity, etc.).

a. Examples of supply-type items:

In what year was John F. Kennedy elected president?_________

Water is composed of the elements___________ and ___________

Barbara was born on January 3, 1961. She is _________ years old today.

If candy bars cost 7¢ each, how many can Gregory buy with 25¢? _________

________is the color that is made by mixing blue and yellow.

2. Selection items

Selection items require the student to select the correct answer to a question or problem from several available answers which are usually printed on the test itself. Selection items measure the student's ability to recognize the correct answer from among some plausible answers. There are several types of selection items.

a. Multiple choice

The multiple choice item is a common type of selection item. Multiple choice items consist of a statement or question, called the stem, which is answered by choosing the correct item from a series of possible alternatives. The incorrect alternatives are called distractors. One or more of the distractors may be very nearly correct and the student's task is thus to choose the best answer from those presented. The items may also be designed so that more than one alternative is correct and the student must choose each of them.

Multiple choice items may be designed to measure the student's understanding of concepts and his ability to apply principles as well as to recognize discrete facts. The item stems should be constructed so that they are unambiguous and do not give grammatical clues as to the correct answer.

1) Examples of multiple choice items:

Blue belongs to the set of

a. months
b. colors
c. days of the week
d. clothes

John has 3 apples. He gives one to Mark and then he eats one. Which mathematical sentence best states this operation?

a. 3 - 2 = 1

b. 3 - 1 - 1 = 1

c. 3 - 1 = 2

d. 1 + 1 + 1 = 3

Water is composed of the elements hydrogen and __________

a. carbon

b. H_2O

c. nitrogen

d. oxygen

b. Alternative response items

Alternative response items require the student to choose one of two possible responses to a statement or question. The most common type of alternative response item is the true-false item, although students are sometimes required to choose between other alternatives, such as disagree-agree; good-poor; yes-no; etc. Alternative response items measure the student's ability to recognize a fact, term or principle as being correctly or incorrectly stated and also his ability to distinguish between an established fact and speculation or opinion. Some modifications of this type of item require the student to change the statements he has marked false so as to make them correct.

Alternative response items should be carefully and clearly worded to avoid confusion and should not contain irrelevant words or phrases for the purpose of tricking the student.

1) Examples of alternative response items:

T F Arizona is one state which borders California.

YES NO New York City is the most populous city in the world.

GOOD POOR Jerry is the first person to reach a two-car accident in which a woman has been thrown from her car and is lying unconscious on the pavement. Jerry quickly carries her to his car and drives immediately to his family doctor, who is a well-known surgeon. Evaluate Jerry's reaction to the accident.

c. Matching exercise

The matching exercise requires the student to select the one response from a list which is associated with or "goes with" a statement, a word, or a symbol in another list. The matching is based on a stated or clearly implied principle. The number of response items may equal the number of stimulus items, or there may be included some extra response items which do not match any of the stimulus items.

Matching items are best suited to determining the student's ability to recognize the association existing between sets of previously learned material. The principle of association used as the basis of matching should be the same throughout the entire set of items to be matched.

1) Examples of matching exercises:

Match the mother animal with her baby. Put the letter of the best answer from the right-hand column in its appropriate blank in the left-hand column.

__________ 1. Horse
__________ 2. Dog
__________ 3. Cow
__________ 4. Cat
__________ 5. Sheep

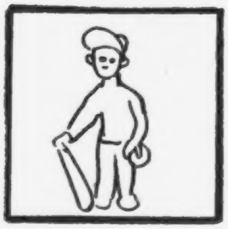
a. calf
b. lamb
c. chick
d. colt
e. puppy
f. kitten
g. donkey

Another example is found on Plate 5.4.

Example of a Matching Exercise

Draw a line from each letter to the picture of the object that begins with that letter.

t



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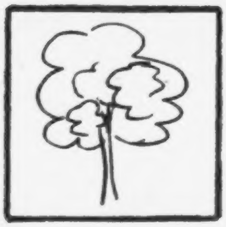

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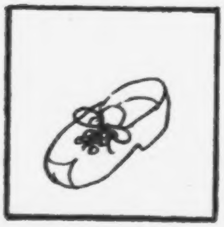

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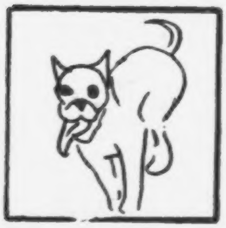

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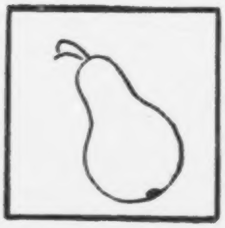


Plate 5.4

3. Interpretive Exercise

The interpretive exercise provides a way of measuring complex learning outcomes such as the application of principles, the understanding of information, the recognition of relevant assumptions and implications, and the ability to solve problems. In this type of exercise, the student is presented with a set of information in the form of a paragraph, a formula, a graph, a chart, or a map and is then required to answer one or more items that correctly reflect the information presented. He may also be required to answer a series of questions about the material.

Since all students receive the same information on all items, an interpretive exercise measures their comprehension of the material and the way they use the information to derive their answer. It does not measure recall of specific information, nor the ability to recognize a correct answer that has been previously memorized.

The items of an interpretive exercise are more difficult to design than the types of items mentioned previously. A great deal of time and skill are needed to select content and word the items so that they measure the types of learning objectives desired by the teacher.

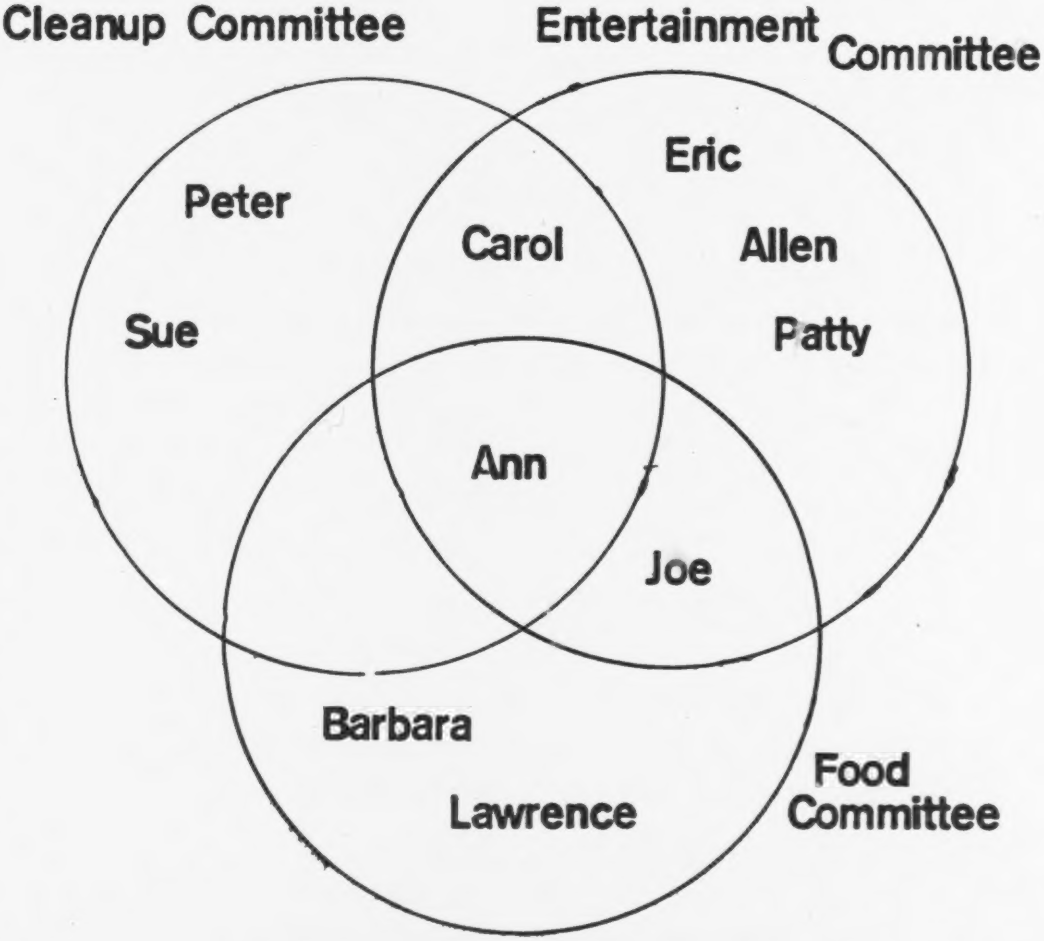
a. Examples of interpretive exercises

Jimmy's new puppy is lost. His father suggests that Jimmy put an ad in the local newspaper. What information should Jimmy include in his advertisement that will be most helpful in locating the dog? More than one answer is correct.

A. The puppy's name is Skipper.
B. The puppy is brown with black ears.
C. Jimmy bought the puppy last Saturday.
D. Skipper is a German shepherd.
E. Skipper's favorite toy is his red ball.

Other examples of interpretive exercises are shown on Plates 5.5 and 5.6.

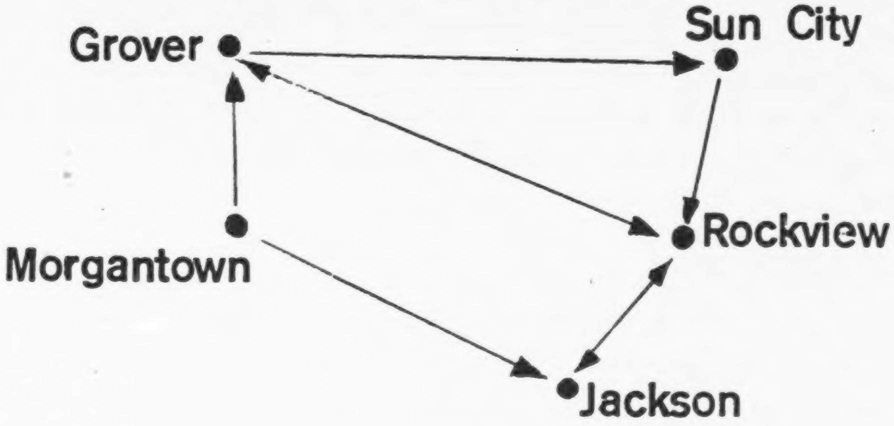
Example of Interpretive Exercise


Cleanup Committee
Entertainment Committee
Food Committee
Peter
Sue
Carol
Eric
Allen
Patty
Ann
Joe
Barbara
Lawrence

A. How many people are on the food committee?
B. Who, if anyone, is on all three committees?
C. How many boys are on the entertainment committee?
D. How many people are on at least two committees?
E. Which committee has the most people?

Plate 5.5

Example of Interpretive Exercise



Presented above are the air routes to and from five towns. Using that information, mark the following statements as true or false:

T F A. It is a simple matter to get back and forth between Grover and Morgantown.

T F B. The routes are designed so that one can fly from Rockview to Morgantown through Jackson in the same amount of time it takes to fly through Grover.

T F C. To fly to Grover from Sun City it is necessary to go through Rockview.

T F D. Rockview is the town with the busiest airport.

T F E. It is impossible to fly from Morgantown to Sun City without going through Grover.

Plate 5.6

All of the types of test items discussed thus far have been objective items. Objective items are those on which each answer can be clearly keyed and scored as correct or incorrect. A test that is completely objective would yield identical scores if scored by several different people. Items which are considered subjective are those in which the judgment of the scorer somewhat determines the score the person will receive. The results will vary when scored by different people and some variation will even occur if the items are scored by the same person at different times.

4. Essay items

The essay is a commonly used type of subjective item. Essay items allow the student to respond to a question in his own words. He may or may not be restricted in how much he may say about each item, although all essay questions require more than just a few words to convey an appropriate answer.

Essay items are used to measure the student's ability to organize and integrate information and select and evaluate ideas in a way that objective items do not have the capacity to do. The student is free to choose the ideas on which he wishes to elaborate and to organize ideas in a way he thinks will be most effective.

A good deal of thought should go into the construction of essay tests and into the scoring of them as well. Several hours may be required to score a few sets of essay questions. Many teachers find that scoring one question at a time for the entire set of papers enables them to be more objective in their scoring. Outlining a set of criterion objectives to look for while scoring each question can also increase the objectivity.

a. Examples of essay questions

Yesterday we saw a film on conserving our natural resources. Explain why it is important to do this.

Why do you think it is important to learn arithmetic in school?

Do you think students should help the teacher make decisions about what stories they read? Why do you feel this way?

In what ways are cirrus clouds different from cumulus clouds and in what ways are they alike?

D. Screening instruments are used for general surveys of skills or characteristics for the purpose of "sorting out" individuals who require more intensive diagnostic study. Examples of three screening instruments are presented in chapters 9, 13, and 17 of this *Handbook*.

II. Observational Techniques

Some behaviors of interest to teachers cannot be measured by pencil and paper tests. Psychomotor functioning and social development are examples of student behaviors that lend themselves to observational techniques. An observational technique requires the observation of the student as he performs and a procedure for recording the observation. His behavior or the product resulting from his behavior in a situation may then be evaluated. Recording observations is admittedly more subjective than the measuring of abilities with standardized or teacher-made tests, but it is a valuable way of gaining otherwise unobtainable information and of supplementing more objective measurements. Three methods of recording observations will be considered.

A. Checklist

The checklist consists of a list of behaviors, characteristics, or traits which are marked as being present or absent in the case of a particular pupil's behavior sample or behavioral outcome. A check list may also be designed so that a series of behaviors is ranked as to the sequence in which they occur. Checklists may be published and standardized so that a student's behaviors can be compared to established norms or they can be devised by teachers.

1. Example of a Teacher-Devised Checklist

Plate 5.7 is a checklist devised by a teacher for the purpose of evaluating her pupils' behavior during play projects. Each child's behavior is observed every two weeks as indicated and is checked for each category. A separate record is kept for each student.

Checklist for Play Project Behavior
(Teacher-Devised Checklist)

Name: Michael Williamson

	2nd Week	4th Week	6th Week	8th Week	10th Week
1. Gets own materials from storage.					
2. Cleans up own area when finished.					
3. Holds following implements appropriately and uses them successfully for intended purpose.					
Crayons					
Pencil					
Scissors					
Ruler					
Eraser					
Chalk					
4. Persists with projects until completed.					
5. Accepts guidance and criticism when offered.					
6. Seeks help when in difficulty.					
7. Initiates and directs own projects without constant help-seeking.					
8. Shows imagination in projects rather than copying other children.					
9. Works cooperatively with other children in group situations.					
10. Shows pride in finished project.					

Plate 5.7

B. Rating Scales

The rating scale consists of a list of behaviors, characteristics, or traits on each of which the rater indicates the degree of proficiency the child exhibits in his behavior, the amount of a certain behavior that he characteristically shows, or the quality of the product resulting from the child's behavior. Each item is rated along a continuum, the points on which may be indicated by numbers, by short descriptions, or by one-word indicators. The teacher or rater marks the point on this continuum which best reflects the position of the student. The rating scale thus provides more information about the student than does the check list which only indicates whether or not the child possesses the characteristic being measured. A rating scale may also utilize a ranking technique. With this method all students in a situation or their products are ranked with reference to a particular characteristic or are divided into a number of groups according to the characteristics under consideration. Teachers may devise their own rating scales or use published scales.

1. Examples of published rating scales:
    a. Fels Child Behavior Scales
    b. Child Behavior Rating Scale

1. Examples of teacher-devised rating scales

The following scale has been designed to evaluate the behavior of a student in group situations. A separate report is kept for each student. A mark is made at any place along the line to indicate the rating.

Name: ______________________________

1. Volunteers to take leadership roles (i.e., chairman, project leader, team captain, etc.) in group situations.

ALWAYS OFTEN OCCASIONALLY SELDOM NEVER

2. Volunteers to take supportive roles (i.e., assistant to chairman, committee member, project helper, etc.) in group situations.

ALWAYS OFTEN OCCASIONALLY SELDOM NEVER

3. Shows overt signs of frustration when ongoing behavior is interrupted or interfered with by teacher or other students.

ALWAYS OFTEN OCCASIONALLY SELDOM NEVER

4. Holds "grudges" against other students with whom he has come into conflict.

ALWAYS OFTEN OCCASIONALLY SELDOM NEVER

5. Is chosen by other children to be part of games, projects, committees, etc.

ALWAYS OFTEN OCCASIONALLY SELDOM NEVER

The following rating scale has been devised to evaluate a student's product; in this case a term project. The wording is in general terms so that the scale may be applied to different types of projects. Again, each student's product is rated separately on each item.

1. The project is complete in every respect.

Project complete in every detail	"Added touches" are needed to improve project	Project unacceptable in its present form

2. Finished project corresponds to proposed plan.

Project corresponds exactly to plan	Project differs slightly from plan	Project bears no resemblance to plan

3. Project shows orginality.

Project is imaginative and creative	Project is imaginative in some respects	Project is exact reproduction of printed example or teacher's suggestion

4. Finished project is attractive and neat; mistakes have been corrected as well as possible.

Project is very neat and attractive	Project has a few "rough spots" that, if corrected, would improve its appearance	Project has been carelessly done

5. Project is appropriate for ability of student.

Project is appropriate for ability of student	Project is slightly too difficult or easy for student to handle well	Project is either so difficult that quality suffered or so easy that it offered no challenge

C. Anecdotal Records

An anecdotal record is a factual account of a pupil's spontaneous behavior as observed by the teacher in typical or representative situations. Only the exact behavior, recorded as objectively as possible, should be part of the anecdotal record. Any interpretation of the incidents or behavior should be kept separate and clearly labeled as such. Anecdotal records should be written at the time of the observation or as soon afterward as possible so that no detail is distorted or lost to memory.

If the incidents which are observed are selected carefully and the behavior recorded accurately, anecdotal records can be a valuable source of information, especially concerning the emotional or social areas of development. Anecdotal records are most useful as a supplement to the data gained by more systematic means.

1. Example of an anecdotal record

Name: Barton Haynsworth
Date: 11-6
Situation: Arithmetic Class
Observation:

Barry volunteered an answer in arithmetic class. When Gordon pointed out that the answer was wrong, Barry cried. Several students in the near vicinity giggled, and Barry stomped his foot and put his head down on his desk.

Interpretation:

Barry seems quick to interpret all criticism as personal criticism, which he is not able to tolerate. He tends to withdraw from these threatening situations rather than aggressively defending his self interests.

III. Peer Appraisal and Self-report Techniques

Some information about an individual is best gained by simply asking the person himself or by asking those who know him--his peers or his family. Such methods are especially adapted to gaining knowledge about a person's interests, his attitudes, and his personel adjustment. These methods of gaining information must assume that the person giving the information is being as honest and accurate as possible.

A. Interview

The interview is a dialogue between two people: the interviewer, who is attempting to gain information and the person giving the information, the interviewee. An interview may be structured, so that each person interviewed is asked the same set of questions and thus essentially the same information is obtained for each person. An unstructured interview, on the other hand, while it is being conducted for a purpose, may follow one of many directions depending on the answers and spontaneous responses given by the interviewee.

1. Example of structured interview

The following information is asked a parent of each child at the time of enrolling the child in the first grade:

1. Child's name:
2. Birthdate:
3. Parents' names:
4. Parents' occupation(s):
5. Number, ages, and sex of siblings:
6. Kindergarten attendance:
7. Date of child's vaccination:
8. What diseases has the child had?
9. Child's physical handicaps:
10. Child's special interests or hobbies:
11. How often does the child show outbursts of temper?
12. Is he ever destructive to himself or other objects when angry?
13. Is the child afraid to sleep alone at night?
14. Does he resist being left with a sitter?
15. Is he able to run simple errands by himself?
16. Does he reject trying new foods?
17. Does he accept help or guidance gracefully when in difficulty?
18. Does he seem overly afraid of being physically hurt, of falling, or of being struck by other children?
19. Does he prefer playing with other children or alone?
20. When there is a quarrel or disagreement between the child and his siblings or playmates, is he usually the one who started it?

2. Example of unstructured interview

Mrs. Warren noticed that Theresa and Bobby both brought in rocks every time it was their turn for "Show and Tell." She decided to question them about this. Following is Mrs. Warren's interview with Bobby and her interview with Theresa. Notice how the teacher's questions and comments change according to the children's responses. The unstructured interview develops in a unique pattern on each occasion.

a. Interview with Bobby

Mrs. W.: Bobby, I've noticed you always bring rocks to Show and Tell. Is there any special reason for this?

Bobby: I have a big collection of them at home.

Mrs. W.: How interesting. Where did you get them all?

Bobby: My father works for the museum and he brings them to me from his trips.

Mrs. W. That's very exciting, Bobby. Would you like to bring in the whole collection sometime and tell us all about them and about your father's trips?

Bobby: I'd really like that, Mrs. Warren!

b. Interview with Theresa

Mrs. W.: Theresa, I've noticed you always bring rocks to Show and Tell. Is there any special reason for this?

Ther.: No, not exactly.

Mrs. W.: Is collecting rocks your hobby?

Ther.: No, it's just all I can ever think of to bring.

Mrs. W.: Well, I've been talking with Mrs. Thompson and she would like to have some third-graders help her teach reading to some of her first-graders who are having trouble with new words. Since you are such a good reader, would you like to be one of the helpers?

Ther.: OK. That might be fun.

Mrs. W.: If you enjoy it, maybe you could tell the other students about it at Show and Tell next Friday.

Ther.: I think I'd like that. If other people want to help, too, maybe we can teach the first graders every week.

B. Questionnaire and Inventory

Questionnaires and inventories are somewhat similar to written interviews. A questionnaire presents the individual with a set of questions to which he responds in writing. The questions may be purely factual or they may be personal, asking the respondent how he thinks or feels about some matter or what he thinks he would do in a given situation. An inventory may require that the respondent choose from a list of statements those which he feels best apply to himself, or he may be asked to indicate to what degree each item applies to himself. Some inventories present many items in pairs and the student must choose from each pair the statement that he feels most applies to himself or the activity that he would most like to do if he had to choose one of the pair.

1. Examples of questionnaires and inventories
   a. SRA Reading Checklist
   b. What I Like To Do (An Inventory of Children's Interests)

C. Sociometric Techniques

A sociometric technique involves asking the individuals in a group to indicate those group members with whom they would prefer to be associated in a given situation. This technique is a way of determining how a group is socially structured. It indicates those who are socially accepted and those who are socially rejected by the others in the group. This information can be very helpful to teachers in understanding the behavior of their pupils.

When administering a sociometric device, it is important to indicate to the students the precise situation for which they are making their choices. The set of friends with whom an individual prefers to do a science project may differ from those with whom he would like to plan a picnic. It is also important to specify to the students that their choices will be shown to no one else.

1. Example of a sociometric technique

Name: ______________________________

We will be trying some new activities next term. Several of these activities will involve working in small groups. We may also change our seating arrangements and committee assignments if you like. Please indicate several choices for each of the following situations. If there is someone you would especially not want to be in any of the groups, you may write that also. No one else will see your choices.

1. These are the people I would most like to work with on a project that is to be graded.

2. These are the people I would most want to be in my group if we were going to do something for fun.

3. These are the people I would like to have sit near me for the rest of the term.

The results of the students' choices for a given situation may be represented graphically on a sociogram. Arrows indicate a positive choice. Double arrows indicate a reciprocal choice. Bars indicate a rejection. An example of a sociogram is given in Plate 5.8.

Example of a Sociogram

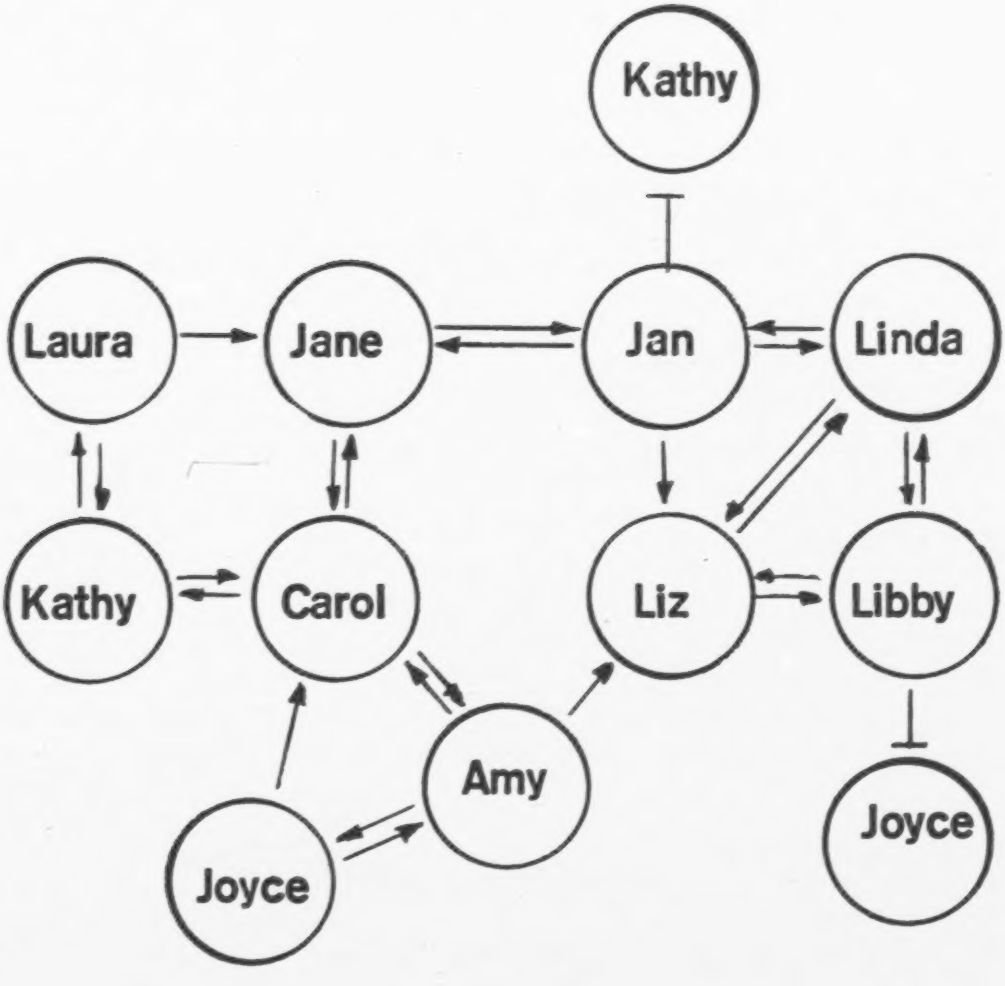

Kathy
Laura
Jane
Jan
Linda
Kathy
Carol
Liz
Libby
Amy
Joyce
Joyce

Plate 5.8

IV. Tests Used for the Evaluation of Handicapped Children

A few of the following tests (such as the ITPA) should be administered only by a qualified psychological examiner. The reader is referred to the Mental Measurements Yearbook series, edited by O. K. Buros, for data related to level, publisher, price, and evaluations of these and other tests mentioned in this handbook. Brief descriptions can be found in two of the references (Smith, R. M.) cited at the end of this chapter.

Perceptual - Motor Difficulties

1. Moore Eye-Hand Coordination and Color-Matching Test
2. Marianne Frostig Developmental Test of Visual Perception
3. Arthur Point Scale of Performance
4. Bender Visual-Motor Gestalt Test
5. Embedded Figures Test
6. Porteus Maze Test
7. Lincoln - Oseretsky Tests of Motor Proficiency
8. Cureton Physical Fitness Test
9. Purdue Perceptual Motor Survey
10. Brace Scale of Motor Ability
11. Edmiston Motor Capacity Test

Speech Difficulties

1. Templin - Darley Screening and Diagnostic Tests of Articulation
2. Speech Articulation Test for Young Children (Revised)
3. Weidner - Fenach Speech Screening Test
4. Speech Diagnostic Chart
5. The Arizona Articulation Proficiency Scale
6. Clark Picture Inventory
7. Boston University Speech Sound Discrimination Picture Test

Language Difficulties

1. Illinois Test of Psycholinguistic Abilities (ITPA)
2. Parsons Language Sample
3. Differential Language Facility Test
4. Peabody Picture Vocabulary Test

Reading Achievement Tests

1. California Reading Test
2. Developmental Reading Tests
3. Gates Basic Reading Tests
4. Gates Primary Reading
5. Iowa Silent Reading Tests

6. Metropolitan Achievement Tests
7. SRA Achievement Series: Reading
8. Stanford Achievement Test: Reading
9. Wide Range Achievement Test

Diagnostic Reading Tests

1. Gray Oral Reading Test
2. Spache Diagnostic Reading Scale
3. Gates - McKippop Reading Diagnostic Tests
4. Doren Diagnostic Reading Tests of Word Recognition Skills
5. Silent Reading Diagnostic Tests
6. Roswell - Chall Diagnostic Test of Word Analysis Skills
7. McCullough Word Analysis Test

Arithmetic Achievement Tests

1. California Arithmetic Tests
2. Coordinated Scale of Attainment in Arithmetic
3. Lee - Clark Fundamentals Survey Test
4. Metropolitan Achievement Tests
5. Stanford Achievement Tests
6. Wide Range Achievement Test
7. SRA Achievement Series

Diagnostic Arithmetic Tests

1. Brueckner Diagnostic Arithmetic Tests
2. Diagnostic Arithmetic Tests
3. Los Angeles Diagnostic Tests
4. Diagnostic Chart for Fundamental Processes in Arithmetic
5. Diagnostic Tests in Arithmetic Fundamentals
6. Diagnostic Tests and Self-Helps in Arithmetic
7. Easy Steps in Arithmetic
8. Essential Arithmetic Tests

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CHAPTER 6

RELIABILITY, VALIDITY, AND USABILITY*

Reliability

In this course, we are concerned with reliability as consistency and dependability of information. Reliability is often quantified by using correlation methods. Validity information is also often quantified by using correlation methods. A correlation coefficient is an indication of the relationship or association between two variables. A high positive correlation is interpreted that a high score on one variable, variable x, is associated with a high score on the other variable, variable y; and low scores on variable x tend to go with low scores on variable y. For example, if children in a classroom tend to do about as well in reading as they do in arithmetic, i.e., those children who get high scores in reading get high scores in arithmetic, and those children who get low scores in reading get low scores in arithmetic, then it would be said that a positive correlation exists between reading and arithmetic achievement in that classroom. A negative correlation is interpreted that large values for variable x are associated with small values for variable y, and small values for x are related to large values of y.

Types of Reliability

There are four types of reliability to be concerned about in this course. These are as follows:

1. test-retest;
2. equivalent forms;
3. inter-scorer; and
4. intra-scorer.

These types of reliability are summarized on Plate 6.1.

Test-retest reliability means the same test given on separate occasions will provide the same results providing nothing was changed in the interval between the two tests. For example, if you gave a spelling test on Monday

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*The CAI version of this chapter was written by Mrs. Deborah Schreiber and Professor Carol A. Cartwright.

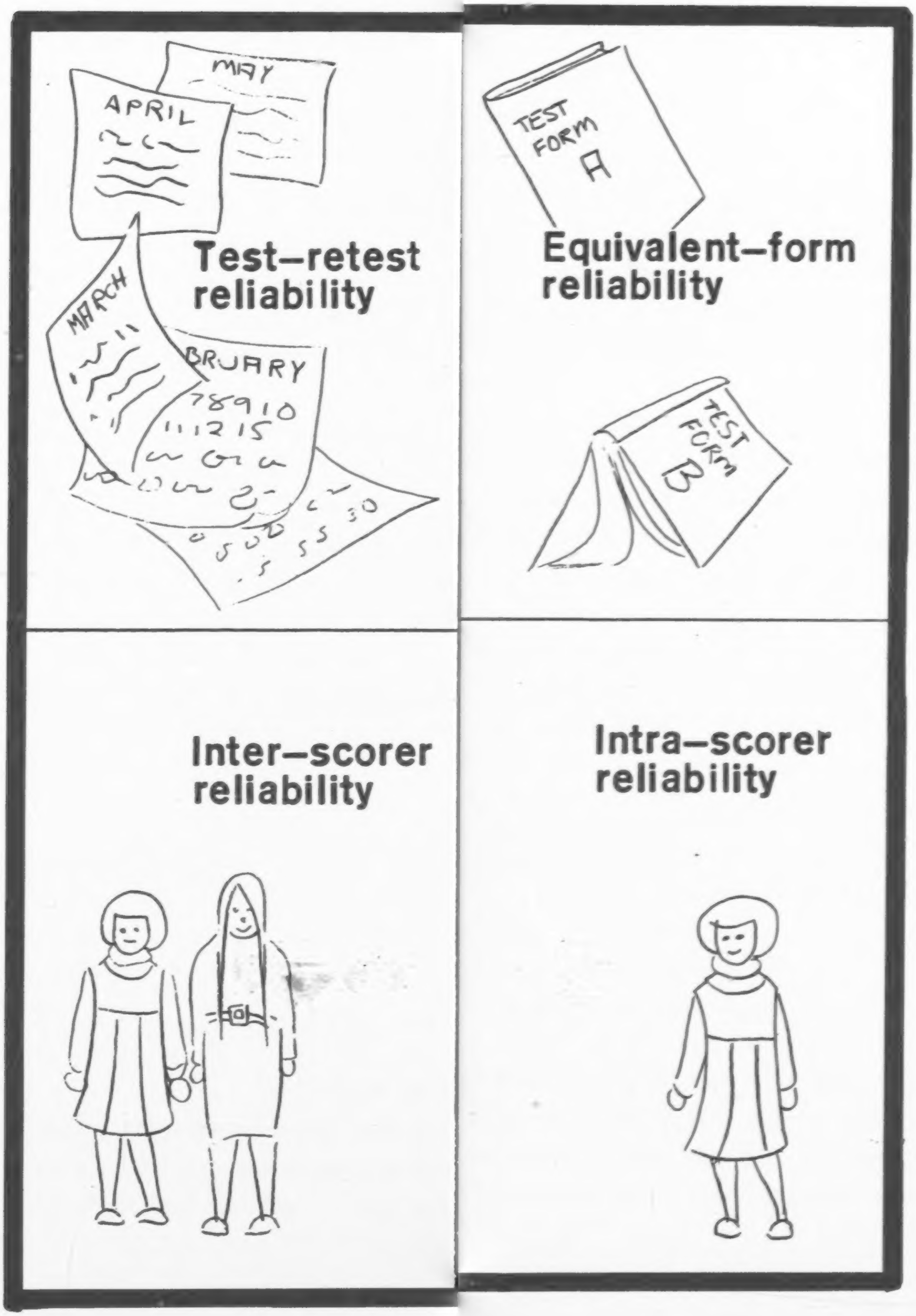
MAY
APRIL
MARCH
BRUARY
Test–retest reliability
TEST FORM A
Equivalent–form reliability
TEST FORM B
Inter–scorer reliability
Intra–scorer reliability

Plate 6.1

morning and again on Friday morning, you would expect the children to obtain approximately the same scores on Friday if no teaching of spelling had occurred between Monday and Friday. If a measuring instrument is reliable, it should give the same results no matter who uses the instrument. If a child weighs 68 pounds at 10:00 on a Wednesday morning, you would expect him to weigh 68 pounds at 11:00 on that same Wednesday morning if the scale was accurate and reliable. If you weigh the child in September and again in June you would not expect him to weigh exactly the same. Chances are the child would gain some weight between September and June. If you weighed all of the children in the class in September and again in June on the same scale you would expect that in general, those children who weighed least in relation to the rest of the class in September would also weigh least in relation to the rest of the class in June. If this is the case, the testing situation would be an example of good test-retest reliability. Similarly, those children who score high in relation to the rest of the class on an intelligence test in September would be expected to test high in relation to the rest of the class in December on the same intelligence test if the test has good test-retest reliability.

Equivalent forms of a test are two separate sets of items based on the same test specifications which have been shown to have the same means and variability. The two tests will be similar in content and ideas covered, but will have different items. If you wish to test children on certain academic concepts, it is often useful to find out how much the children know before you teach them and then how much they know after you teach them, so you can estimate the improvement. One way of doing this is to give a test before and after you teach. This is often done in weekly spelling programs. Children are given spelling tests on Monday and then again on Friday. In programs other than spelling, this test-retest procedure may not be suitable because results might be affected by "practice effects." It has been found that children gain some knowledge simply by taking the test, i.e., they get somewhat higher scores on the second testing because they have practiced on the first administration of the test. In order to avoid this problem, test makers sometimes make up similar forms of the test.

Inter-scorer reliability refers to the consistency with which two or more scorers rate or score a set of observations. Inter-scorer reliability is concerned with the agreement between scorers. Agreement between scorers is likely to vary, depending on what is being scored. It is more likely that teachers or scorers will agree on the correct answer to an arithmetic problem than on the quality of a written composition. The more objective an evaluation procedure is, the more likely observers will agree as to the performance.

Intra-scorer reliability is concerned with the degree of agreement in the ratings of one observer, or scorer, over a period of time. Intra-scorer reliability also implies consistency in the ratings of one observer when viewing different children or when viewing the same child in different situations. This type of reliability also implies that the same set of standards will be applied to different situations. Sometimes we attribute a change in the behavior of a child to the child, when the change should be attributed to a change in the standards used by the observer. For example, if a teacher does not feel well, he may judge situations differently than he would if he were in better health. Intra-scorer reliability can be influenced by such things as how well the last lesson plan went, and by outside influences such as family problems, or temporary poor health.

Validity

When selecting or designing evaluation procedures, it is necessary to consider the validity of the results that were obtained from that evaluation procedure. An evaluation procedure is valid if it accurately measures that which it is supposed to measure. To take an almost trivial example, suppose that we are concerned about whether or not a child can walk the length of a balance beam. If we choose to question the child about his ability we have chosen one possible evaluation procedure. This evaluation procedure might be reliable; the child might reply that he can walk the balance beam. However, the evaluation procedure, although reliable, may not be valid. The appropriate procedure would be to ask the child to actually perform the test. In this instance the evaluation carefully mirrors the objective or the task specified for the child. The other procedure, questioning the child, although reliable, does not accurately measure the performance of the child walking the balance beam. Usually, the evaluation method which allows a child to display the desired behavior in the most direct way is the most valid one.

An evaluation procedure might be appropriate for one purpose but not for another. A given evaluation procedure may yield results which have high validity for one purpose, but low validity for another purpose. Questioning a child might be unsuitable to find out if the child can perform a task (e.g., walking a balance beam) but questioning might be appropriate for finding out whether the child wishes to perform a certain task or finding out the child's needs. Writing a story might be an evaluation procedure to find out if the child can use certain adjectives properly, but writing a story would be an inappropriate evaluation procedure for finding out if the child can add one-digit numbers.

Types of Validity

Content or curricular validity. One of the factors in the choice of a valid evaluation procedure is whether or not the procedure actually measures or yields information about the performance or skill that has been taught. In the example of teaching an "Earth and Sky" unit the test items or the evaluation procedure chosen should be representative of the content that was taught and of the behaviors that were to be developed by the unit. If test items are representative of content and behaviors taught, the results yielded by the tests will probably have acceptable content validity. Content validity is defined as the extent to which an evaluation procedure is appropriate for measuring the behaviors and the content taught in a particular unit or teaching session. Content validity of an evaluation procedure is likely to be high if the procedure measures a representative sample of the behaviors and the content it is supposed to measure. Content validity is the extent to which an evaluation procedure is representative of the behaviors we want children to display.

Predictive validity. If an evaluation procedure has predictive validity, it gives information which can be used to make an accurate prediction of future events or performance. It is extremely important, for example, for a readiness test to have high predictive validity. If we give a child a reading readiness test we would like to be able to know with some confidence that if the child obtains a certain score on the readiness test, he is, in fact, ready to begin reading. A high score on the readiness test should indicate that he will do well in reading in the near future. The future performance that is to be predicted by using an evaluation procedure is called the criterion. The information that is used to make the prediction is called the predictor. It is well known that the best estimate of how well a student will perform in college work is how well he did in high school. Given a group of high school students, suppose the task is to predict future success in college. Success in college will be called the criterion. If we use high school success or achievement to predict college achievement, then the high school achievement is called the predictor or predictor variable.

A correlation coefficient is used to indicate the estimated amount of predictive validity of an evaluation procedure. A correlation coefficient indicates the correlation between scores obtained on an evaluation procedure and scores on the criterion at a later date. In general, the higher the correlation coefficient, the higher the predictive validity of the evaluation procedure. Predictive validity correlation coefficients are determined by correlating scores obtained on the evaluation procedure that is used to make the prediction with scores obtained on a measure of the criterion performance at some future date. Obviously, when you give a test you cannot be sure that there will be a high correlation with future performance. Consequently, you must trust the reports of the test makers and use the information that they provide to determine whether or not the test or evaluation procedure is useful for predicting some future performance.

Relationship Between Validity and Reliability

Although theoretically it is possible to treat validity and reliability separately, in practice it is very hard to make use of one concept without the other. It is useless to use an instrument or an evaluation procedure that has very low reliability because you can never be sure that the results would be consistent from time to time or from situation to situation. If you get different results with different testings of the same instrument you cannot be sure which of the results is valid. It is possible to have a highly reliable procedure which is not valid for the purpose for which it is being used. We know for example, that we can get very reliable results when we measure the height of children. If we measure children several times in the period of one hour we can be certain that the results will be quite reliable. However, even though measuring the height of children is a very reliable procedure, it is not valid for estimating how well they can read. Remember that reliability is a necessary but not sufficient condition for validity; i.e., reliability is essential for validity but the presence of reliability does not insure validity.

2

Usability

The usability of an evaluation procedure refers to those practical considerations for the administration and scoring of the instrument under question. In general, directions for administering a test should be easy to follow and easy for the children to understand. If the test has time limits, the timing system should not require complicated equipment and it should be easy to keep track of the different time allotments. If the evaluation procedure is broken into subprocedures or subtests, the number of subtests should be small so that an adequate sample of behavior can be obtained for each subtest.

The materials required should be easy to distribute and collect; they should also be appropriate to the age and motor skills of the children. If two procedures are equally reliable and valid we should use the one which is the easiest to administer and which has fewer chances for error.

For example, if a 30-minute and a 45-minute test give the same or equally valid and reliable results, then it makes sense to choose the one that takes less time to administer. Similarly, the test that is easier to score is preferable if otherwise tests are equally reliable and valid. The following are practical considerations which should be considered in selecting an evaluation procedure:

1. Appropriateness of the procedure for the group and purpose of testing
2. Ease of administration
3. Time needed for administration
4. Ease of scoring
5. Ease of interpretation and application
6. Availability of equivalent forms
7. Cost

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CHAPTER 7

INDIVIDUAL DIFFERENCES AND NORMALITY*

Understanding Scores

Introduction

Test scores and other measures used in education suffer from the fact that they are not common to the experience of people in every day life. Most of us deal with measures of the physical world around us every day. We often buy meat by the pound or cloth by the yard and the objects themselves because of their visual, kinesthetic properties reinforce the idea of weight and length. There are even some indirect measures such as temperature which have a direct physical confirmation. Actually, it would be very difficult to explain temperature to a person as variations in the height of a column of mercury if there were no confirming sensory process of heat and cold.

A word should be said about precision in measurement. Actually, we probably have much more precision than we need when we buy a yardstick at the store or when we check the butcher's scale to see that he has removed his thumb in weighing our purchase. In education the useful measures are derived from comparisons with group performance and contain nowhere near the precision we are accustomed to having in the physical world around us.

The goal of this chapter is to bring the student into contact with the most frequently-encountered educational measures and to facilitate the proper interpretation of educational measurements in diagnosing the extent of children's handicapping conditions.

This section of the course, CARE I, is predicated on the assumption that students do not themselves need to generate educational statistics and summary values from raw data provided by large groups of pupils. Instead, it is assumed that students need to understand score information and should be able to manipulate data about pupils. Students who are educators should be able to prepare test data and other information so that it can be interpreted by staff members in referral agencies.

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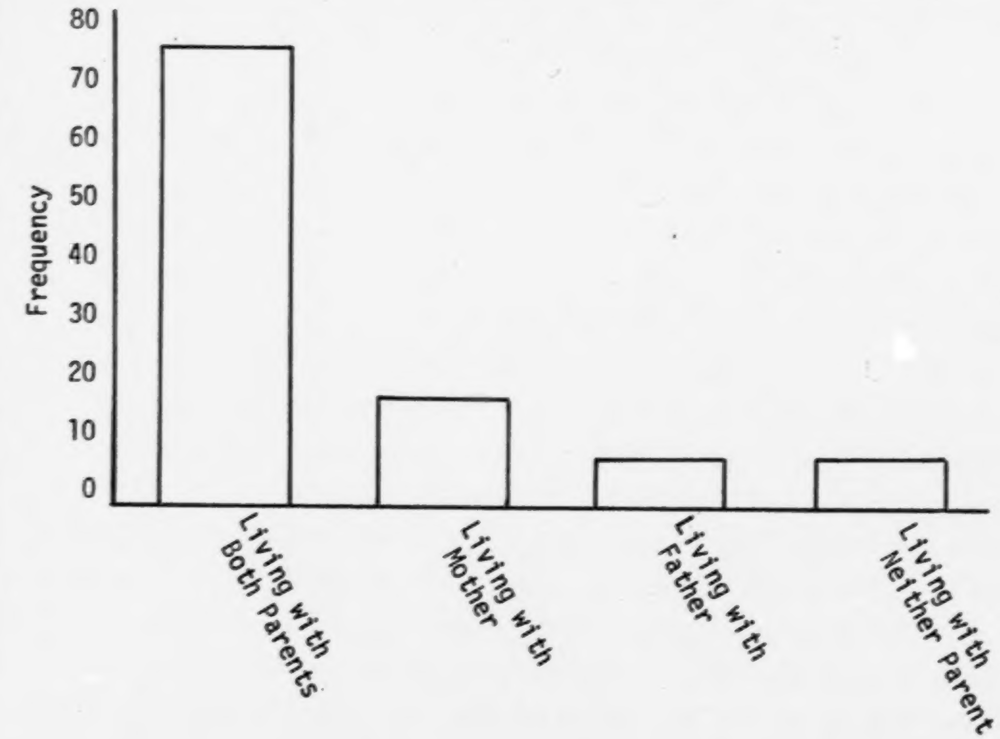
*The CAI version of this chapter was written by Professor Harold E. Mitzel.

Bar Graphs

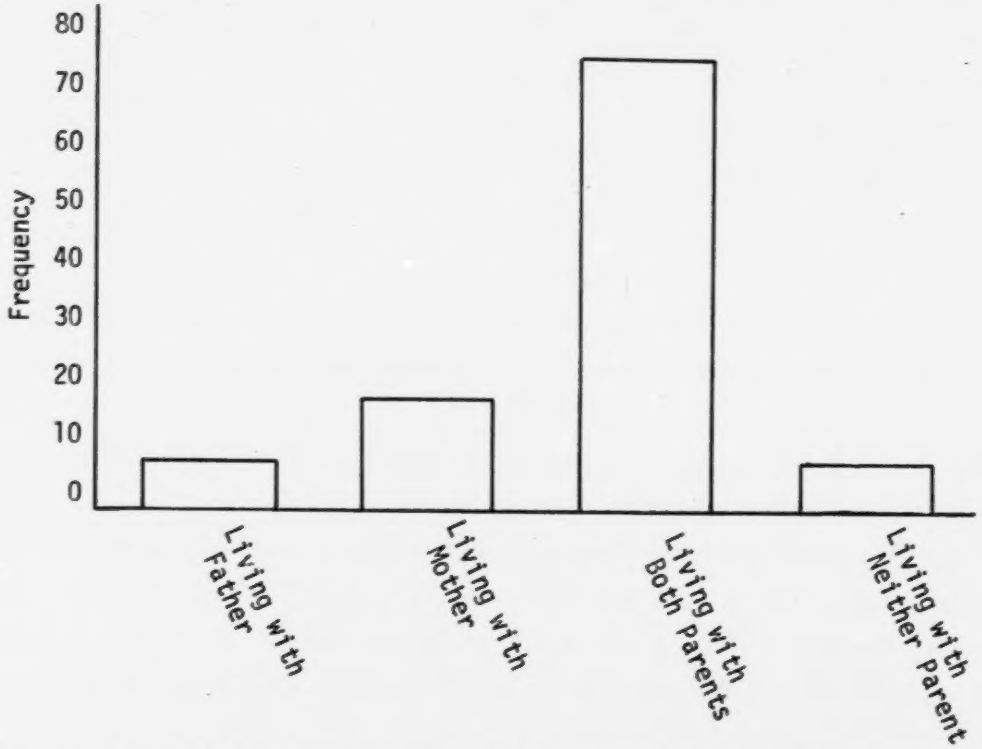
An old-fashioned, but fundamentally sound way of making good interpretations from collections of educational data is the creative use of graphical representation. The simplest graphical representation which has only one scale or dimension is the bar graph or sometimes called the bar chart. Suppose we wanted to picture some sociological data about a representative group of 100 5 year-olds. From the cumulative folders we ascertain that 75 children live with both parents in the home, 15 children live with the mother only, 5 children live with the father only, and 5 children have neither parent. The data in bar chart form could look something like the following as shown in Plate 7.1.



Bar graph of living arrangements of 100 5-year-olds. (Hypothetical data)

Plate 7.1

It should be observed that there is only a single scale in Plate 7.1 and the scale is frequency as shown on the vertical dimension. Well, you say, what about the horizontal dimension? No, it cannot be scaled because it flunks the test of non-interchangability of categories. You can see that there is no particular virtue in having the most numerous category (Living with Both Parents) at the extreme left. The four categories are mutually independent and their placement from left to right makes no difference in the interpretation of the data. The four sociological categories are discrete and their rearrangement as shown in Plate 7.2 is just as good as the presentation in Plate 7.1.

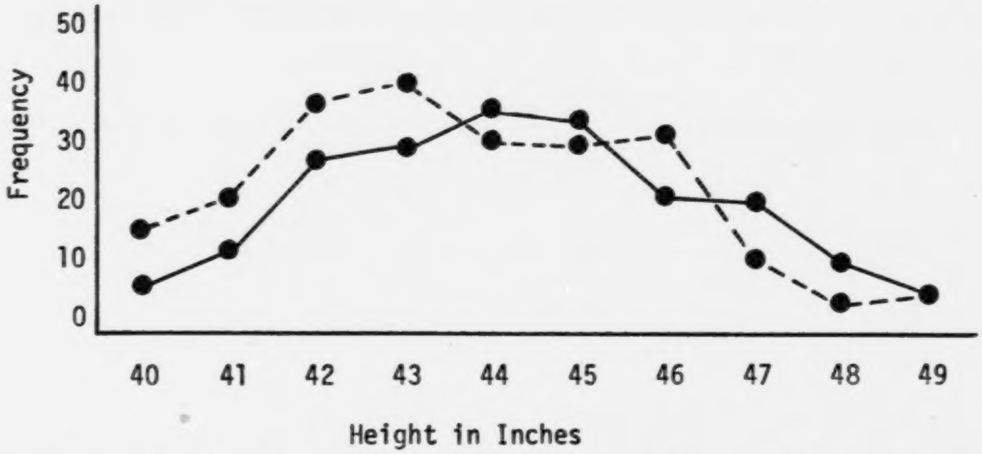


Bar graph of living arrangements of 100 5-year-olds. (Hypothetical data)

Plate 7.2

Frequency Curves

Sometimes we have data that exhibit two-dimensional value which benefit from graphical representations. Suppose we wish to compare the heights of six-year-old readers and non-readers in an elementary school. Our data might be that shown in Plate 7.3.



Heights in inches for six-year-old readers and non-readers. (Hypothetical data)

Plate 7.3

The frequency polygons (a sequence of straight lines connecting a frequency observation at each of several measurements) shown in Plate 7.3 have two-dimensional quality, that is both frequency and height. Both dimensions have scale qualities. And, herein lies the distinctions between bar graphs and frequency polygons. You couldn't take the vertical column headed "40 inches" and interchange it with "45 inches" or put it any where else except to the left of "41 inches."

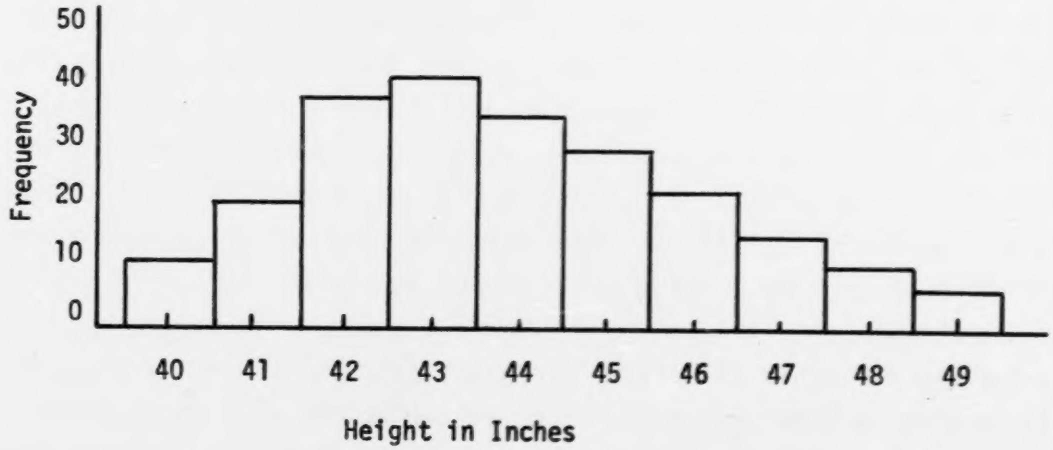
Continuous and Deviate Variation

Most of the measures that we deal with in education and psychology are assumed to represent continuous variation as opposed to discrete measures. Thus, in the example of the heights of boys used in the CAI segment, 47 is taken to mean more than 46-1/2, but less than 47-1/2, and all the boys who fall in this one-inch span are given the one label or measure of 47 inches. The rule about continuous variation is that a given label extends one-half unit (of measure) below and one-half unit above the labelled value. Now it should not be assumed that *all* measures are continuous. Suppose we wanted to study the numbers of living siblings possessed by a group of children. Now it should be obvious that no one could have a half sibling or 1-1/2 siblings or 1.75 siblings. It is important for educators to recognize when their data are discrete and to label them accordingly. For instance it is inappropriate to use decimals or fractional equivalents in describing averages gleaned from discrete data. If the average number of siblings for a group of children falls between 2 and 3, then the average is reported as 2-3 siblings, not 2.5, or 2-1/2 siblings.

On the other hand, *continuous* data offer no such interpretative and descriptive problems. Test scores and their derivatives do have by convention the qualities of continuous measures and in the rest of this chapter we shall deal only with continuous data.

Histogram

A graphical representation of a two-dimensional frequency chart is properly called a histogram. Vertical bars stand for the frequencies associated with each unit of measurement on a horizontal scale. To illustrate a histogram we have taken a portion of the same data used in the frequency polygon in Plate 7.4 and converted it to histogram format.



Histogram of heights in inches for six-year-old readers. (Non-readers excluded) [Hypothetical Data]

Plate 7.4

It is important for the student to recognize that the histogram is fundamentally different than the bar graph, and that the convention of continuous variation has been preserved in the diagram of the histogram.

Normal Curve of Error

If we take histograms and reduce the unit of measurement to very small widths and then join the midpoints of the tops of the histogram, the effect is created of a smooth curve which often has the familiar "bell shape." The curve we can create by the frequency data and made infinitely large has the following dimensions:

1. The vertical dimension represents the number of cases or frequencies.
2. The horizontal dimension represents a scale or measure that is continuous.
3. The cases or frequences tend to pile up in the center and to be relatively few at the extremes.
4. The total area under the curved line is proportional to the total frequency.

Therefore, if the total area under the curve is one hundred percent, fifty percent would be below the exact center of the distribution. If we were to cut our smoothed curve out of cardboard, we could find the point dividing the upper 50% from the lower 50% by balancing the total cutout on a straight edge.

The curved line approaches, but never quite touches, the base line, at least in theory. Scientists over the past three centuries have observed that many measures, particularly human traits when plotted, have the characteristic shape of the curve we are studying. In fact, a mathematical formula called the "Incomplete Beta Function" has been devised to describe it precisely.

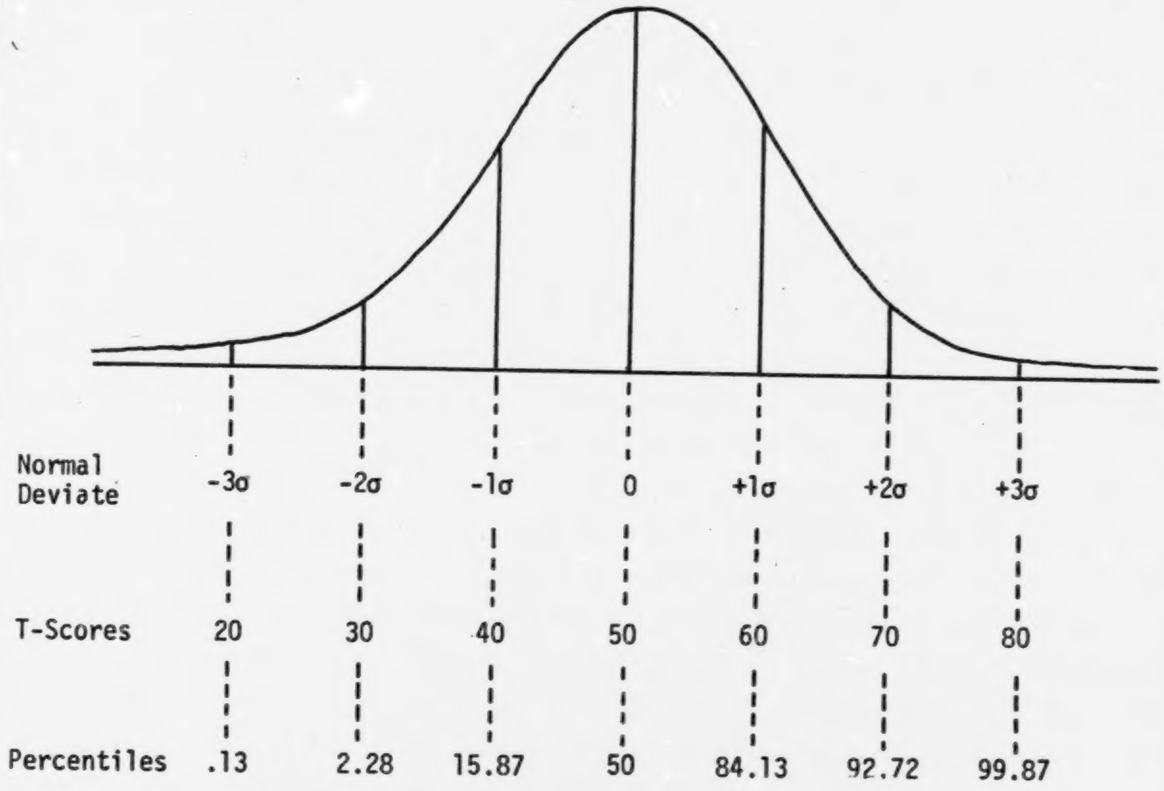
The fact is that the properties of this curve which we have come to call the normal curve of error are mathematically exact and well known. We can use it as a model for handling and describing the behavior variables and characteristics of children. The center point of the normal curve of error coincides on two measures, the arithmetic mean and the median. The arithmetic mean is defined as the sum of the values in the distribution divided by the number of observations and the median is defined as the middle value in an ordered distribution of values. Both these points occur at the same center point in a normal curve.

Normal Deviate

In order to locate various points on a normal curve of error, we have to have a standard unit of width or distance on the horizontal scale. In this course we have defined such a unit as the normal deviate. The word normal refers to the normal curve and the word deviate refers to deviation from the center. Thus, the center of the distribution or the point where the mean and the median occur is the point of reference from which the normal deviate values are used to measure distances on the model. Values above or to the right of the mean have positive values; values to the left or below the center have negative normal deviates or minus values. One of the important features about the normal curve of error is that six normal deviates, three on each side of the mean, encompass all but approximately one quarter of one percent of the total area between the curve and the base line. This feature is often useful in estimating the amount of the variability for distributions of real data. Plate 7.5 shows that points to the left or below zero on the base line of the normal curve have minus or negative values of the normal deviate and corresponding points to the right or above the zero reference have positive or plus values.

On the normal curve model we refer to unit widths from the mean as normal deviates and these, of course, may have either plus or minus values. When we are talking about measures or data from a particular sample distribution, we refer to the same unit of variability as the standard deviation. It is standard because everyone calculates it in the same way except for possible errors in arithmetic. It is a deviation because the mean of the observation is the center of the sample distribution and is a base reference point. It should be remembered, however, that when we are talking about standard deviations and real data the familiar symmetrical shape of the normal curve model may not be obtained. In these instances the size of the standard deviation is the best single description of the total variability in the distribution.

For example, the standard deviation of the nationwide distribution of most intelligence quotients is 15 or 16 points. If in a particular school the obtained standard deviation of children's scores on the Stanford-Binet is only 8 points, then we know that the children in our school are much less variable than the normative population on which the test was standardized. This kind of information provides us with cues on looking for selective factors and other influences on children's aptitude.



Relationships of normal curve to common derived scores.

Plate 7.5

Using Table of Normal Curve of Error - (Plate 7.6)

One of the uses of the tabled values of the normal curve is to relate normal deviate values for individuals to percentile ranks. If we are told that a child is one normal deviate (one standard deviation above the mean of the distribution of his group) we can look in the table of normal curve values and find that the child exceeds approximately 84% (column 3) of the individuals in that group, as long as the distribution closely approximates the normal curve model. We can also use the normal curve table to summarize the performance of students who have been ordered or ranked according to some ability or achievement. Exercises in this course show you how to take data of this kind and summarize children's performance for communication to others interested in the same particular children.

Relationship of Percentile Ranks to Normal Deviate Scale

One of the important generalizations that we learn in this section is that the distances on the normal deviate scale have a kind of equal and relative quality; thus a normal deviate value of +2.0 σ is twice as far away from the mean as the normal deviate of +1.0 σ. The same characteristic does not apply to percentile ranks, however. A percentile rank of 70 is not twice as far away from 50 as the percentile rank of 60, though the percentile difference points seem to be twice as large. The generalization is that the farther two equal frequency segments are from the mean, the greater the spread of the standard deviation units between them. Conversely, the farther a line segment of given width gets away from the mean, the fewer frequencies are associated with it. These relationships are clear in Plate 7.5.

T-Scores

Educators have found that they needed a system of scores which did not have the unfortunate unequal scaling disadvantages of percentile ranks and the awkardness of negatives and decimals characteristic of normal deviate values. A system of scores called T-scores was developed which has a mean of 50 and a normal deviate or standard deviation of 10 points. Thus, in such a system a score of say 60 corresponds to one normal deviate value above the mean, 70 to two normal deviate values and so on. Plate 7.7 has been prepared to enable educators to convert from one to the other type of score. It is also possible to convert from percentile ranks to T-scores, a procedure which has the effect of normalizing a distribution of scores so that they precisely fit the normal curve model.

Stanines - (See Plate 7.8)

Single digit derived scores based on a normal curve concept are called stanines, a contraction for "standard nines." Like other distributions of derived scores, stanines are symmetrical around a middle score of 5; in fact, the middle 20% of a distribution of scores corresponds to a stanine of 5. Stanines are calculated by taking a band of values between about one-fourth standard deviation below the mean and one-fourth standard deviation above the mean for a total band width of one-half standard deviation. Stanine 6 is assigned to all score values which fall between $+.25\ \sigma$ and $+.75\ \sigma$, etc. except, of course, for stanines one and nine which are open-ended at the extremes of the distribution. Stanines have a disadvantage in that they lose information contained in raw scores, percentiles or other derived scores. This slight "loss of information" has to be balanced against the advantages of simplicity and profile interpretability. Where measures of aptitude and ability from many sources are available for groups of children and it is desirable to summarize their individual performances on these tests, conversion of scores to stanines seems most practical. The stanine conversion makes for easy profile comparison and the formation of useful hypotheses about children's symptom clusters. The loss-of-information disadvantage mentioned above may not be all bad. Conversion of raw scores or percentiles to stanines may keep the teacher from the tempting snare of over-interpreting small differences in measured information. On the other hand, the effort to convert raw and other scores into stanines may not be warranted if there are only one or two measures on a particular child. The stanine conversion becomes a decided aid to interpretation when there are several measures to be taken into account about the same child.

Grade Level Equivalent Score

Perhaps the most common derived score used in schools is the grade level equivalent which is defined as the median score on a given test for all the

Stanines	% of Total Frequency in Each Stanine	Corresponding Percentile Ranks
9	4%	97 - 100 PR
8	7%	90 - 96
7	12%	78 - 89
6	17%	61 - 77
5	20%	41 - 60
4	17%	24 - 40
3	12%	12 - 23
2	7%	5 - 11
1	4%	0 - 4
	Total 100%	

Stanines corresponding to proportions of total frequency and percentile ranks.

Plate 7.8

children tested in a given school grade. Grade level scores are deceptively simple to understand and frequently misinterpreted. It is difficult for the layman to realize that half of the children are really below average in any measure that is taken, therefore, the layman's expectation is that all of the children in the fourth grade should achieve at the fourth grade level or above; in fact, if a group tested is representative of the norm group, then only half of the children will have grade level equivalents equal to or above the grade in which they are being tested.

Grade level norms are constructed by a graphical process and interpretations are made by interpolating between tested values or extrapolating on plotted curves beyond tested values. These processes are not completely satisfactory and they have been a source of considerable difficulty in the interpretation of school children's achievement.

Specialists in educational measurement have known for some time that grade level equivalents (GLE) provided an inadequate basis for interpreting the achievement of school children. Some of the more common objections include the following:

1. GLE's can be graphically derived only from the performance of students in a grade for which the given test performance is average. This means that a grade equivalent of 10.0 is not very meaningful in a school in which instruction in that subject stops at the end of the seventh grade.

2. GLE's assume that there is uniform growth of children from the beginning of the school year to the end, and even more untenable is the notion that children don't learn anything during the summer months.

3. Individual pupils for whom GLE's are computed often exhibit wide variability from subject to subject. These variations are often reflections of the variability of achievement in subject matter within grades. For instance, variation in arithmetic within grades is most often less than variation of the same pupils in social studies. If this condition exists, then it is metrically unsound to compare the GLE of a child in arithmetic with his GLE in social studies.

4. GLE's are heavily influenced by social customs and school promotion policies. If one school promotes children on the basis of mastery of cognitive skills, and another promotes on the basis of age-peer relationships, then one can expect wide variation in GLE's for the same level of performance in the two different schools.

AREAS OF NORMAL CURVE

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
0.00	.0000	.5000	.5000
0.01	.0040	.5040	.4960
0.02	.0080	.5080	.4920
0.03	.0120	.5120	.4880
0.04	.0160	.5160	.4840
0.05	.0199	.5199	.4801
0.06	.0239	.5239	.4761
0.07	.0279	.5279	.4721
0.08	.0319	.5319	.4681
0.09	.0359	.5359	.4641
0.10	.0398	.5398	.4602
0.11	.0438	.5438	.4562
0.12	.0478	.5478	.4522
0.13	.0517	.5517	.4483
0.14	.0557	.5557	.4443
0.15	.0596	.5596	.4404
0.16	.0636	.5636	.4364
0.17	.0675	.5675	.4325
0.18	.0714	.5714	.4286
0.19	.0753	.5753	.4247
0.20	.0793	.5793	.4207
0.21	.0832	.5832	.4168
0.22	.0871	.5871	.4129
0.23	.0910	.5910	.4090
0.24	.0948	.5948	.4052
0.25	.0987	.5987	.4013
0.26	.1026	.6026	.3974
0.27	.1064	.6064	.3936
0.28	.1103	.6103	.3897
0.29	.1141	.6141	.3859

Plate 7.6

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
0.30	.1179	.6179	.3821
0.31	.1217	.6217	.3783
0.32	.1255	.6255	.3745
0.33	.1293	.6293	.3707
0.34	.1331	.6331	.3669
0.35	.1368	.6368	.3632
0.36	.1406	.6406	.3594
0.37	.1443	.6443	.3557
0.38	.1517	.6480	.3520
0.39	.1517	.6517	.3483
0.40	.1554	.6554	.3446
0.41	.1591	.6591	.3409
0.42	.1628	.6628	.3372
0.43	.1664	.6664	.3336
0.44	.1700	.6700	.3300
0.45	.1736	.6736	.3264
0.46	.1772	.6772	.3228
0.47	.1808	.6808	.3192
0.48	.1844	.6844	.3156
0.49	.1879	.6879	.3121
0.50	.1915	.6915	.3085
0.51	.1950	.6950	.3050
0.52	.1985	.6985	.3015
0.53	.2019	.7019	.2981
0.54	.2054	.7054	.2946
0.55	.2088	.7088	.2912
0.56	.2123	.7123	.2877
0.57	.2157	.7157	.2843
0.58	.2190	.7190	.2810
0.59	.2224	.7224	.2776
0.60	.2257	.7257	.2743
0.61	.2291	.7291	.2709
0.62	.2324	.7324	.2676
0.63	.2357	.7357	.2643
0.64	.2389	.7389	.2611

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
0.65	.2422	.7422	.2578
0.66	.2454	.7454	.2546
0.67	.2486	.7486	.2514
0.68	.2517	.7517	.2483
0.69	.2549	.7549	.2451
0.70	.2580	.7580	.2420
0.71	.2611	.7611	.2389
0.72	.2642	.7642	.2358
0.73	.2673	.7673	.2327
0.74	.2704	.7704	.2296
0.75	.2734	.7734	.2266
0.76	.2764	.7764	.2236
0.77	.2794	.7794	.2206
0.78	.2823	.7823	.2177
0.79	.2852	.7852	.2148
0.80	.2881	.7881	.2119
0.81	.2910	.7910	.2090
0.82	.2939	.7939	.2061
0.83	.2967	.7967	.2033
0.84	.2995	.7995	.2005
0.85	.3023	.8023	.1977
0.86	.3051	.8051	.1949
0.87	.3078	.8078	.1922
0.88	.3106	.8106	.1894
0.89	.3133	.8133	.1867
0.90	.3159	.8159	.1841
0.91	.3186	.8186	.1814
0.92	.3212	.8212	.1788
0.93	.3238	.8238	.1762
0.94	.3264	.8264	.1736
0.95	.3289	.8289	.1711
0.96	.3315	.8315	.1685
0.97	.3340	.8340	.1660
0.98	.3365	.8365	.1635
0.99	.3389	.8389	.1611

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
1.00	.3413	.8413	.1587
1.01	.3438	.8438	.1562
1.02	.3461	.8461	.1539
1.03	.3485	.8485	.1515
1.04	.3508	.8508	.1492
1.05	.3531	.8531	.1469
1.06	.3554	.8554	.1446
1.07	.3577	.8577	.1423
1.08	.3599	.8599	.1401
1.09	.3621	.8621	.1379
1.10	.3643	.8643	.1357
1.11	.3665	.8665	.1335
1.12	.3686	.8686	.1314
1.13	.3708	.8708	.1292
1.14	.3729	.8729	.1271
1.15	.3749	.8749	.1251
1.16	.3770	.8770	.1230
1.17	.3790	.8790	.1210
1.18	.3810	.8810	.1190
1.19	.3830	.8830	.1170
1.20	.3849	.8849	.1151
1.21	.3869	.8869	.1131
1.22	.3888	.8888	.1112
1.23	.3907	.8907	.1093
1.24	.3925	.8925	.1075
1.25	.3944	.8944	.1056
1.26	.3962	.8962	.1038
1.27	.3980	.8980	.1020
1.28	.3997	.8997	.1003
1.29	.4015	.9015	.0985
1.30	.4032	.9032	.0968
1.31	.4049	.9049	.0951
1.32	.4066	.9066	.0934
1.33	.4082	.9082	.0918
1.34	.4099	.9099	.0901

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
1.35	.4115	.9115	.0885
1.36	.4131	.9131	.0869
1.37	.4147	.9147	.0853
1.38	.4162	.9162	.0838
1.39	.4177	.9177	.0823
1.40	.4192	.9192	.0808
1.41	.4207	.9207	.0793
1.42	.4222	.9222	.0778
1.43	.4236	.9236	.0764
1.44	.4251	.9251	.0749
1.45	.4265	.9265	.0735
1.46	.4279	.9279	.0721
1.47	.4292	.9292	.0708
1.48	.4306	.9306	.0694
1.49	.4319	.9319	.0681
1.50	.4332	.9332	.0668
1.51	.4345	.9345	.0655
1.52	.4357	.9357	.0643
1.53	.4370	.9370	.0630
1.54	.4382	.9382	.0618
1.55	.4394	.9394	.0606
1.56	.4406	.9406	.0594
1.57	.4418	.9418	.0582
1.58	.4429	.9429	.0571
1.59	.4441	.9441	.0559
1.60	.4452	.9452	.0548
1.61	.4463	.9463	.0537
1.62	.4474	.9474	.0526
1.63	.4484	.9484	.0516
1.64	.4495	.9495	.0505
1.65	.4505	.9505	.0495
1.66	.4515	.9515	.0485
1.67	.4525	.9525	.0475
1.68	.4535	.9535	.0465
1.69	.4545	.9545	.0455

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
1.70	.4554	.9554	.0446
1.71	.4564	.9564	.0436
1.72	.4573	.9573	.0427
1.73	.4582	.9582	.0418
1.74	.4591	.9591	.0409
1.75	.4599	.9599	.0401
1.76	.4608	.9608	.0392
1.77	.4616	.9616	.0384
1.78	.4625	.9625	.0375
1.79	.4633	.9633	.0367
1.80	.4641	.9641	.0359
1.81	.4649	.9649	.0351
1.82	.4656	.9656	.0344
1.83	.4664	.9664	.0336
1.84	.4671	.9671	.0329
1.85	.4678	.9678	.0322
1.86	.4686	.9686	.0314
1.87	.4693	.9693	.0307
1.88	.4699	.9699	.0301
1.89	.4706	.9706	.0294
1.90	.4713	.9713	.0287
1.91	.4719	.9719	.0281
1.92	.4726	.9726	.0274
1.93	.4732	.9732	.0268
1.94	.4738	.9738	.0262
1.95	.4744	.9744	.0256
1.96	.4750	.9750	.0250
1.97	.4756	.9756	.0244
1.98	.4761	.9761	.0239
1.99	.4767	.9767	.0233
2.00	.4772	.9772	.0228
2.01	.4778	.9778	.0222
2.02	.4783	.9783	.0217
2.03	.4788	.9788	.0212
2.04	.4793	.9793	.0207

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
2.05	.4798	.9798	.0202
2.06	.4803	.9803	.0197
2.07	.4808	.9808	.0192
2.08	.4812	.9812	.0188
2.09	.4817	.9817	.0183
2.10	.4821	.9821	.0179
2.11	.4826	.9826	.0174
2.12	.4830	.9830	.0170
2.13	.4834	.9834	.0166
2.14	.4838	.9838	.0162
2.15	.4842	.9842	.0158
2.16	.4846	.9846	.0154
2.17	.4850	.9850	.0150
2.18	.4854	.9854	.0146
2.19	.4857	.9857	.0143
2.20	.4861	.9861	.0139
2.21	.4864	.9864	.0136
2.22	.4868	.9868	.0132
2.23	.4871	.9871	.0129
2.24	.4875	.9875	.0125
2.25	.4878	.9878	.0122
2.26	.4881	.9881	.0119
2.27	.4884	.9884	.0116
2.28	.4887	.9887	.0113
2.29	.4890	.9890	.0110
2.30	.4893	.9893	.0107
2.31	.4896	.9896	.0104
2.32	.4898	.9898	.0102
2.33	.4901	.9901	.0099
2.34	.4904	.9904	.0096
2.35	.4906	.9906	.0094
2.36	.4909	.9909	.0091
2.37	.4911	.9911	.0089
2.38	.4913	.9913	.0087
2.39	.4916	.9916	.0084

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
2.40	.4918	.9918	.0082
2.41	.4920	.9920	.0080
2.42	.4922	.9922	.0078
2.43	.4925	.9925	.0075
2.44	.4927	.9927	.0073
2.45	.4929	.9929	.0071
2.46	.4931	.9931	.0069
2.47	.4932	.9932	.0068
2.48	.4934	.9934	.0066
2.49	.4936	.9936	.0064
2.50	.4938	.9938	.0062
2.51	.4940	.9940	.0060
2.52	.4941	.9941	.0059
2.53	.4943	.9943	.0057
2.54	.4945	.9945	.0055
2.55	.4946	.9946	.0054
2.56	.4948	.9948	.0052
2.57	.4949	.9949	.0051
2.58	.4951	.9951	.0049
2.59	.4952	.9952	.0048
2.60	.4953	.9953	.0047
2.61	.4955	.9955	.0045
2.62	.4956	.9956	.0044
2.63	.4757	.9957	.0043
2.64	.4959	.9959	.0041
2.65	.4960	.9960	.0040
2.66	.4961	.9961	.0039
2.67	.4962	.9962	.0038
2.68	.4963	.9963	.0037
2.69	.4964	.9964	.0036
2.70	.4965	.9965	.0035
2.71	.4966	.9966	.0034
2.72	.4967	.9967	.0033
2.73	.4968	.9968	.0032
2.74	.4969	.9969	.0031

AREAS OF NORMAL CURVE

Plate 7.6 (cont'd)

(1) Normal Deviate (σ)	(2) Area from Mean to σ	(3) Area in Larger Portion	(4) Area in Smaller Portion
2.75	.4970	.9970	.0030
2.76	.4971	.9971	.0029
2.77	.4972	.9972	.0028
2.78	.4973	.9973	.0027
2.79	.4974	.9974	.0026
2.80	.4974	.9974	.0026
2.81	.4975	.9975	.0025
2.82	.4976	.9976	.0024
2.83	.4977	.9977	.0023
2.84	.4977	.9977	.0023
2.85	.4978	.9978	.0022
2.86	.4979	.9979	.0021
2.87	.4979	.9979	.0021
2.88	.4980	.9980	.0020
2.89	.4981	.9981	.0019
2.90	.4981	.9981	.0019
2.91	.4982	.9982	.0018
2.92	.4982	.9982	.0018
2.93	.4983	.9983	.0017
2.94	.4984	.9984	.0016
2.95	.4984	.9984	.0016
2.96	.4985	.9985	.0015
2.97	.4985	.9985	.0015
2.98	.4986	.9986	.0014
2.99	.4986	.9986	.0014
3.00	.4987	.9987	.0013

Area T-Scores in Terms of Percentile Ranks

	PERCENTILE RANK		
T-Score	Above Mean	Below Mean	T-Score
50.0	50.0	50.0	50.0
50.5	51.99	48.01	49.5
51.0	53.98	46.02	49.0
51.5	55.96	44.04	48.5
52.0	57.93	42.07	48.0
52.5	59.87	40.13	47.5
53.0	61.79	38.21	47.0
53.5	63.68	36.32	46.5
54.0	65.54	34.46	46.0
54.5	67.36	32.64	45.5
55.0	69.15	30.85	45.0
55.5	70.88	29.12	44.5
56.0	72.57	27.43	44.0
56.5	74.22	25.78	43.5
57.0	75.80	24.20	43.0
57.5	77.34	22.66	42.5
58.0	78.81	21.19	42.0
58.5	80.23	19.77	41.5
59.0	81.59	18.41	41.0
59.5	82.89	17.11	40.5
60.0	84.13	15.87	40.0
60.5	85.31	14.69	39.5
61.0	86.43	13.57	39.0
61.5	87.49	12.51	38.5
62.0	88.49	11.51	38.0
62.5	89.44	10.56	37.5
63.0	90.32	9.68	37.0
63.5	91.15	8.85	36.5
64.0	91.92	8.08	36.0
64.5	92.65	7.35	35.5
65.0	93.32	6.68	35.0
65.5	93.94	6.06	34.5
66.0	94.52	5.48	34.0
66.5	95.05	4.95	33.5
67.0	95.94	4.46	33.0

Plate 7.7

Area T-Scores in Terms of Percentile Ranks

Plate 7.7 (cont'd)

	PERCENTILE RANK		
T-Score	Above Mean	Below Mean	T-Score
67.5	95.99	4.01	32.5
68.0	96.41	3.59	32.0
68.5	96.78	3.22	31.5
69.0	97.13	2.87	31.0
69.5	97.44	2.56	30.5
70.0	97.72	2.28	30.0
70.5	97.98	2.02	29.5
71.0	98.21	1.79	29.0
71.5	98.42	1.58	28.5
72.0	98.61	1.39	28.0
72.5	98.78	1.22	27.5
73.0	98.93	1.07	27.0
73.5	99.06	0.94	26.5
74.0	99.18	0.82	26.0
74.5	99.29	0.71	25.5
75.0	99.38	0.62	25.0
75.5	99.46	0.54	24.5
76.0	99.53	0.47	24.0
76.5	99.60	0.40	23.5
77.0	99.65	0.35	23.0
77.5	99.70	0.30	22.5
78.0	99.74	0.26	22.0
78.5	99.78	0.22	21.5
79.0	99.81	0.19	21.0
79.5	99.84	0.16	20.5
80.0	99.87	0.13	20.0

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Individual Differences and Normality

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CHAPTER 8

PROFILES OF INDIVIDUAL DIFFERENCES

Profiling is a systematic method of studying individual differences in children. The term profiling is used because the method consists of preparing profiles (charts or graphs) to represent an individual's characteristics (Plate 8.1).

Profiling is an effective tool for the identification of children's educational strengths and weaknesses. Studying children's profiles is a way of screening children for educational problems.

Constructing A Profile

Usually data are collected in such a way that scores on different variables are not comparable. Raw scores from such variables must be converted to another type of score so that a profile can be constructed and meaningful comparisons can be made. Educators often convert raw scores from different variables to age equivalents and/or grade equivalents so that the different variables have a common basis for comparison.

Age equivalents indicate the average performance of a specific group (norm group) of children of various age levels. For example, if a group of 10-1/2 year old children are measured for height, and the average height is found to be 56 inches, then 56 inches is converted to an age equivalent of 10 years and 6 months.

Grade equivalents indicate the average performance of a specific group (norm group) of children of various grade levels. For example, if a group of children in the fifth month of third grade obtain an average score of 28 on a reading test, then a raw score of 28 is converted to a grade equivalent of 3.5 (fifth month of third grade) on that test.

When raw scores have been converted to age equivalents and/or grade equivalents, it is a fairly simple matter to set up a profile chart and plot points to show a child's performance levels. Plates 8.1 and 8.2 are profiles using age equivalents; Plate 8.1 is for a child with a chronological age of 10 years, and Plate 8.2 is for an 8-year old child. Plate 8.3 is a profile

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[*] The CAI version of this chapter was written by Professor Carol A. Cartwright.

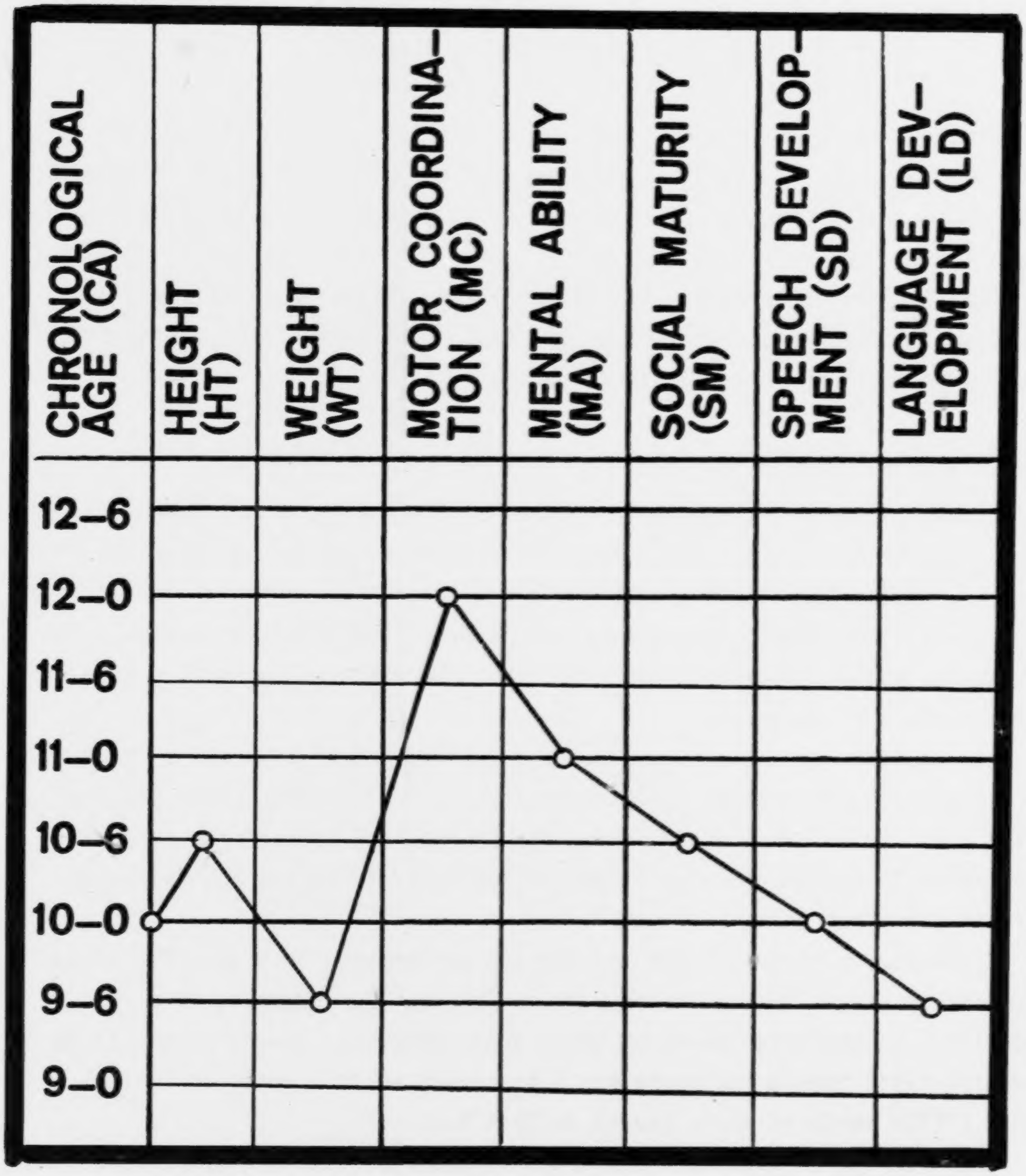
CHRONOLOGICAL AGE (CA)
HEIGHT (HT)
WEIGHT (WT)
MOTOR COORDINATION (MC)
MENTAL ABILITY (MA)
SOCIAL MATURITY (SM)
SPEECH DEVELOPMENT (SD)
LANGUAGE DEVELOPMENT (LD)
12–6
12–0
11–6
11–0
10–6
10–0
9–6
9–0

Plate 8.1

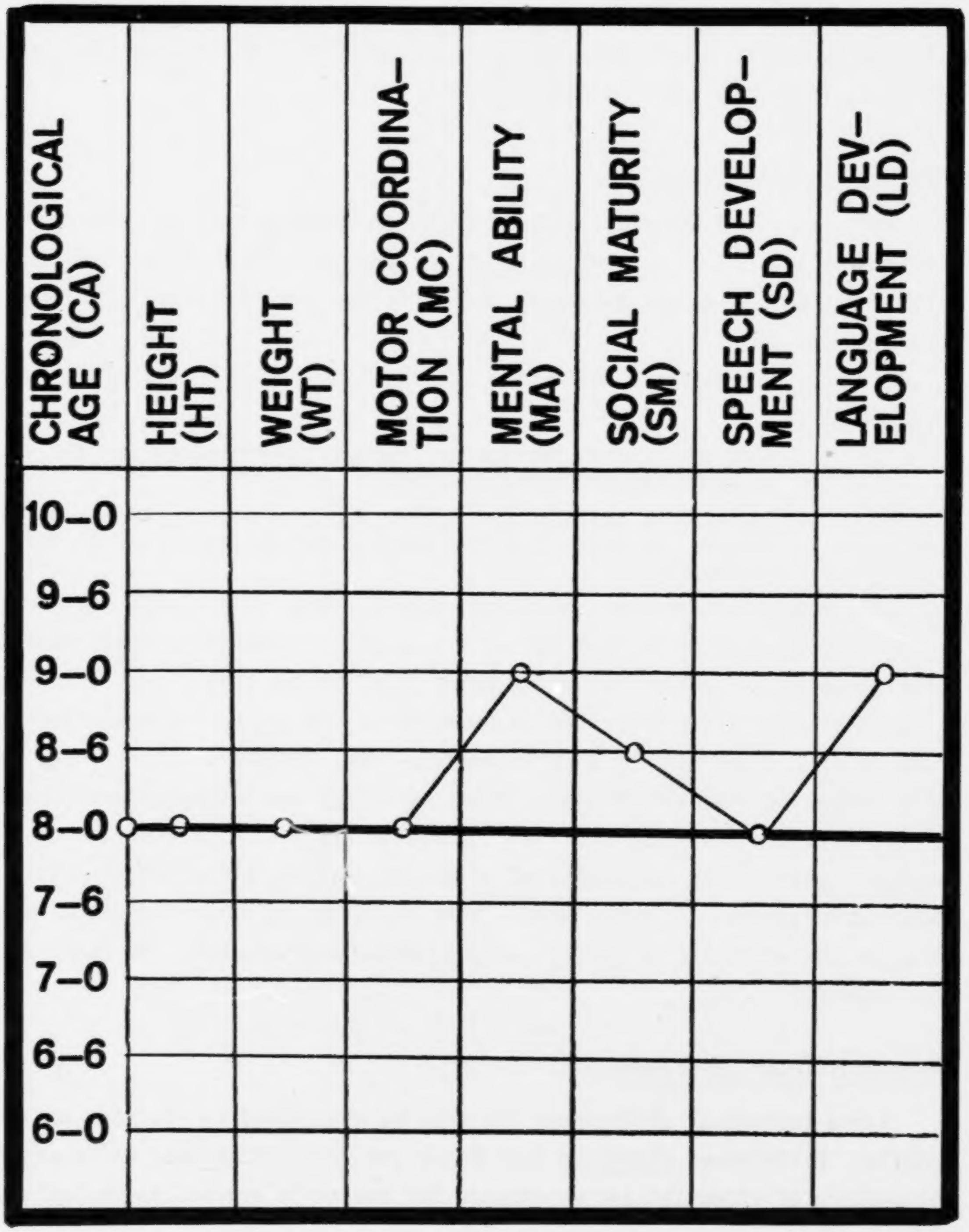
CHRONOLOGICAL AGE (CA)
HEIGHT (HT)
WEIGHT (WT)
MOTOR COORDINATION (MC)
MENTAL ABILITY (MA)
SOCIAL MATURITY (SM)
SPEECH DEVELOPMENT (SD)
LANGUAGE DEVELOPMENT (LD)
10–0
9–6
9–0
8–6
8–0
7–6
7–0
6–6
6–0

Plate 8.2

for a 10-year-old fifth grader using grade equivalents. It should be noted that educationally relevant variables in addition to those illustrated in these profiles can also be used in constructing profiles.

Inter-Individual Differences

Profiles yield information about differences among children; these differences are called inter-individual differences. It is helpful to determine differences which may exist between the child and other children of the same chronological age.

In order to compare a child with others his age, two pieces of information are needed:

1. what constitutes average, or typical, performance for the age group on certain variables, and
2. whether the child being studied performs better than, about the same as, or worse than the average for his age group on the variables.

Differences between the child and other children of the same age can be determined using chronological age as a base line. Similarly, inter-individual differences can be determined using grade level as the base line. Inter-individual differences are indicated by plots which are not on the base line. Plate 8.2 is a profile for a child who has inter-individual differences on three variables: mental ability, social maturity, and language development. The 8-year-old child whose profile is shown in Plate 8.2 is the same as the average 8-year-old on the variables of height, weight, motor coordination, and speech development. In other words, this child has no inter-individual differences on the variables of height, weight, motor coordination, and speech development.

Intra-Individual Differences

Intra-individual differences can also be determined by studying a child's profile. Differences within an individual are intra-individual differences. The pattern of strengths and weaknesses for one child are his intra-individual differences.

A perfectly "average" child would have a perfectly flat profile; i.e., he would be exactly at the average level of performance for his age group on each variable, and his profile would be plotted as a straight line. It is extremely unlikely that a child will be exactly average on all variables of interest to educators. Most children will be better than average on some variables, average on some other variables, and below average on still other variables. When a profile is constructed for most children, the plotting will not result in a straight line. Instead, the plotting will result in a line which fluctuates and shows depressions and elevations; these high and low points represent intra-individual differences or differences within the individual.

Profiles yield information about a child's intra-individual differences. The intra-individual differences are indicated by better performance on some variables (strengths) than on other variables (weaknesses). For example, the 10-year-old child whose profile is shown on Plate 8.1 has relative strengths in motor coordination and mental ability and a relative weakness in language development. On Plate 8.3 is a profile for a fifth grade student. Notice performance on the variables of reading and general information. There are no intra-individual differences on these variables since performance in these areas is plotted at the same grade equivalent.

Summary

The concepts of inter- and intra-individual differences apply equally well to children who are experiencing educational problems and to those who are not. Study of inter-individual differences is particularly useful during the screening phase of the Decision Process. Intra-individual differences are especially helpful when considering referral and when planning modifications in a child's educational program.

Data for two boys are profiled on Plate 8.4. With the exception of both being 10 years old and in the fifth grade, Fred and John differ from each other. They both differ from the average 10-year-old child, and they each have differences within themselves. The profile on Plate 8.4 illustrates an important point: the fact that two children are alike on one variable is no guarantee that they will be alike on other variables. Even though Fred and John are both 10 years old and are both in the fifth grade, they are very different on most other variables. The implications for the teacher which can be derived from Fred's and John's profiles are profound.

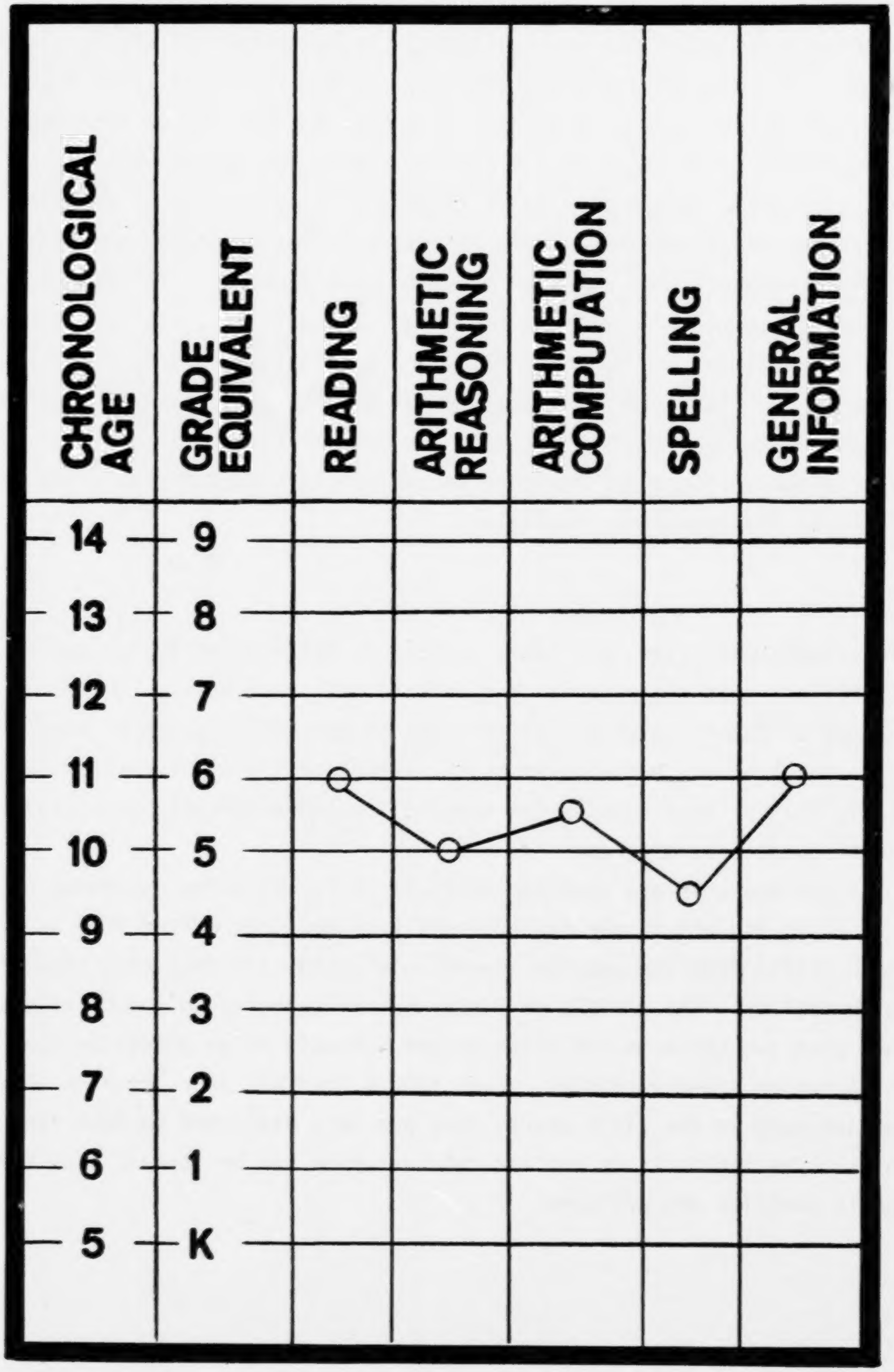
CHRONOLOGICAL AGE
GRADE EQUIVALENT
READING
ARITHMETIC REASONING
ARITHMETIC COMPUTATION
SPELLING
GENERAL INFORMATION
14
13
12
11
10
9
8
7
6
5
9
8
7
6
5
4
3
2
1
K

Plate 8.3

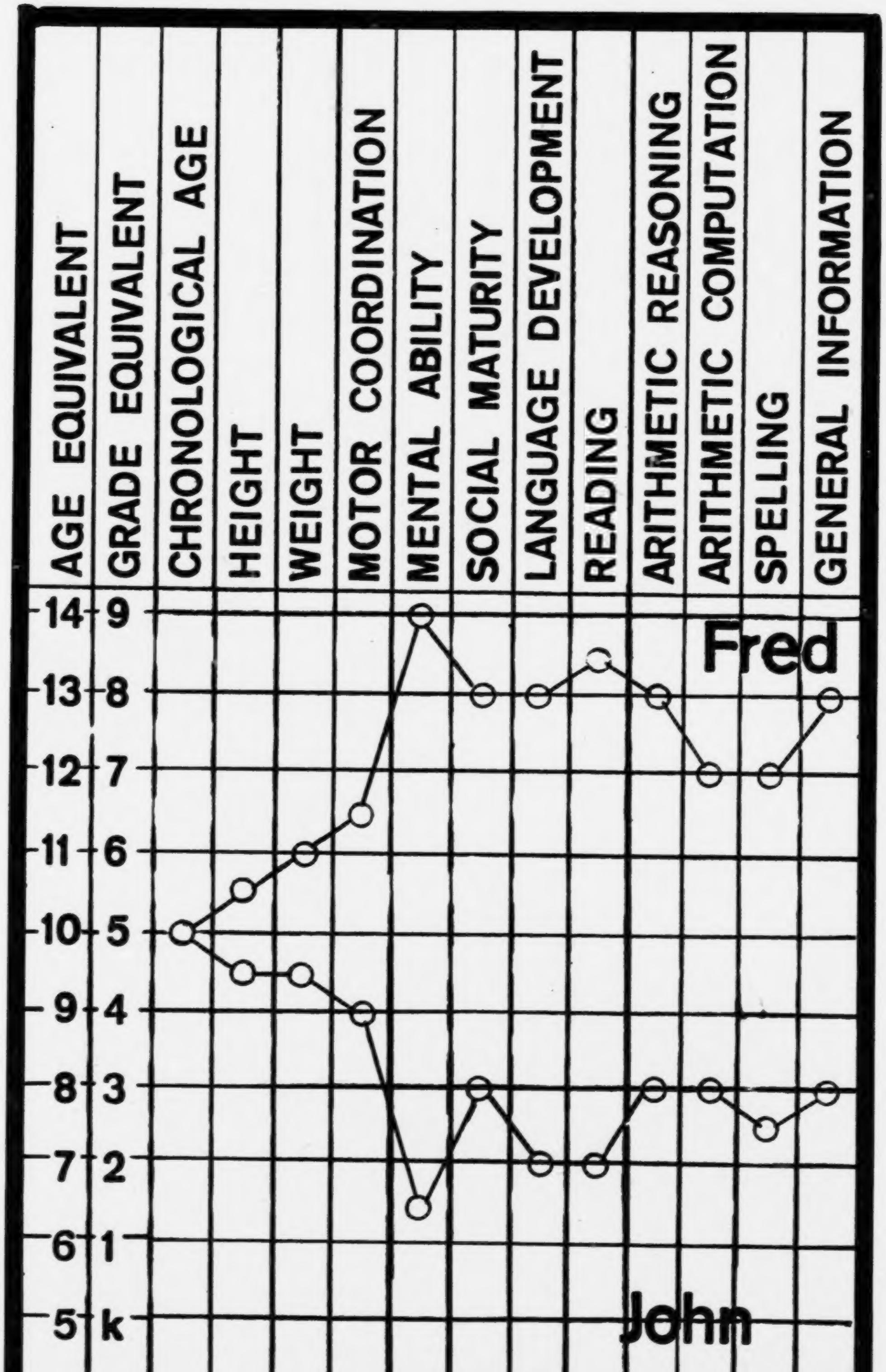
AGE EQUIVALENT
GRADE EQUIVALENT
CHRONOLOGICAL AGE
HEIGHT
WEIGHT
MOTOR COORDINATION
MENTAL ABILITY
SOCIAL MATURITY
LANGUAGE DEVELOPMENT
READING
ARITHMETIC REASONING
ARITHMETIC COMPUTATION
SPELLING
GENERAL INFORMATION
14 9
13 8
12 7
11 6
10 5
9 4
8 3
7 2
6 1
5 k
Fred
John

Plate 8.4

REFERENCES

Chapter 8

Profiles of Individual Differences

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CHAPTER 9

DENVER DEVELOPMENTAL SCREENING TEST*

A screening test is used to "screen out" or "sort out" from the rest of the group, children who may have problems. A test may be labeled as a screening instrument and may be specifically designed to screen out individuals who exhibit deviations which are significantly different from average. The results of tests which are designed to serve other purposes may also be used for screening. For example, results of tests of general mental ability are sometimes used for screening.

The major purpose of screening tests is to place children in either of two groups. One group consists of children who seem to be about average (or above average) and do not seem to have any problems that might cause difficulty for them in school. The second group consists of children who may have problems of one kind or another that will hamper their school progress. The results of the screening tests will not reveal the exact nature of a child's problem, but they should separate children into groups of children who either probably do or do not have significant educational problems.

Use of a screening test is an aid in the identification of children who may require more specialized study. Use of a screening test does not provide a teacher with a definitive diagnosis nor do the test results indicate a prescription or treatment which can be used to ameliorate the difficulty.

In Chapter 4, Decision Process, screening was discussed as one task for the teacher as he participates in the decision process. Screening tests should not be the only source of information for screening. Data derived from other sources can, and should, be used to identify children with deviations. Of course, it is desirable to use several sources of information for screening. Results of screening tests can be combined with information yielded by other evaluation procedures, and this combination of information can be used for screening.

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*The CAI version of this chapter was written by Miss Mary Ann Villwock, Professor Carol A. Cartwright, and Mrs. Alma Fandal.

Types of Screening Instruments

Some screening instruments are designed to identify individuals who may have a specific problem. For example, the Snellen E Chart is used to screen for possible vision problems. Many teachers participate annually in an x-ray examination designed to screen for possible cases of tuberculosis. The x-ray examination is another example of a screening instrument designed to identify individuals who may have a specific problem. Screening tests related to specific problems are discussed in pertinent chapters of this handbook. Some screening instruments are used to identify children who have possible general difficulties in school situations.

Denver Developmental Screening Test (DDST)**

The DDST was designed for use in identifying young children who may have developmental problems; the DDST was designed specifically for use as a screening instrument. It is administered individually and can be used with children aged about 1 month to about 6 years.

The test consists of 105 tasks which are grouped into 4 sectors:

1. personal-social, the ability to get along with others and to care for one's self;
2. fine motor-adaptive, the ability to see and to use hands for various purposes;
3. language, abilities related to hearing and speaking; and
4. gross motor, abilities such as sitting, walking, and jumping.

Refer to the specimen sets for detailed information about the DDST.

Plates 9.1 to and including 9.8 are examples of DDST forms which are to be used in conjunction with on-line material for Chapter 9.

** FRANKENBURG, W. K., DODDS, J. B., & FANDAL, ALMA W. Denver Developmental Screening Test - Manual. Denver Colorado: University of Colorado Medical Center, 1970.

DENVER DEVELOPMENTAL SCREENING TEST

Date 10/15/70

Name

Birthdate

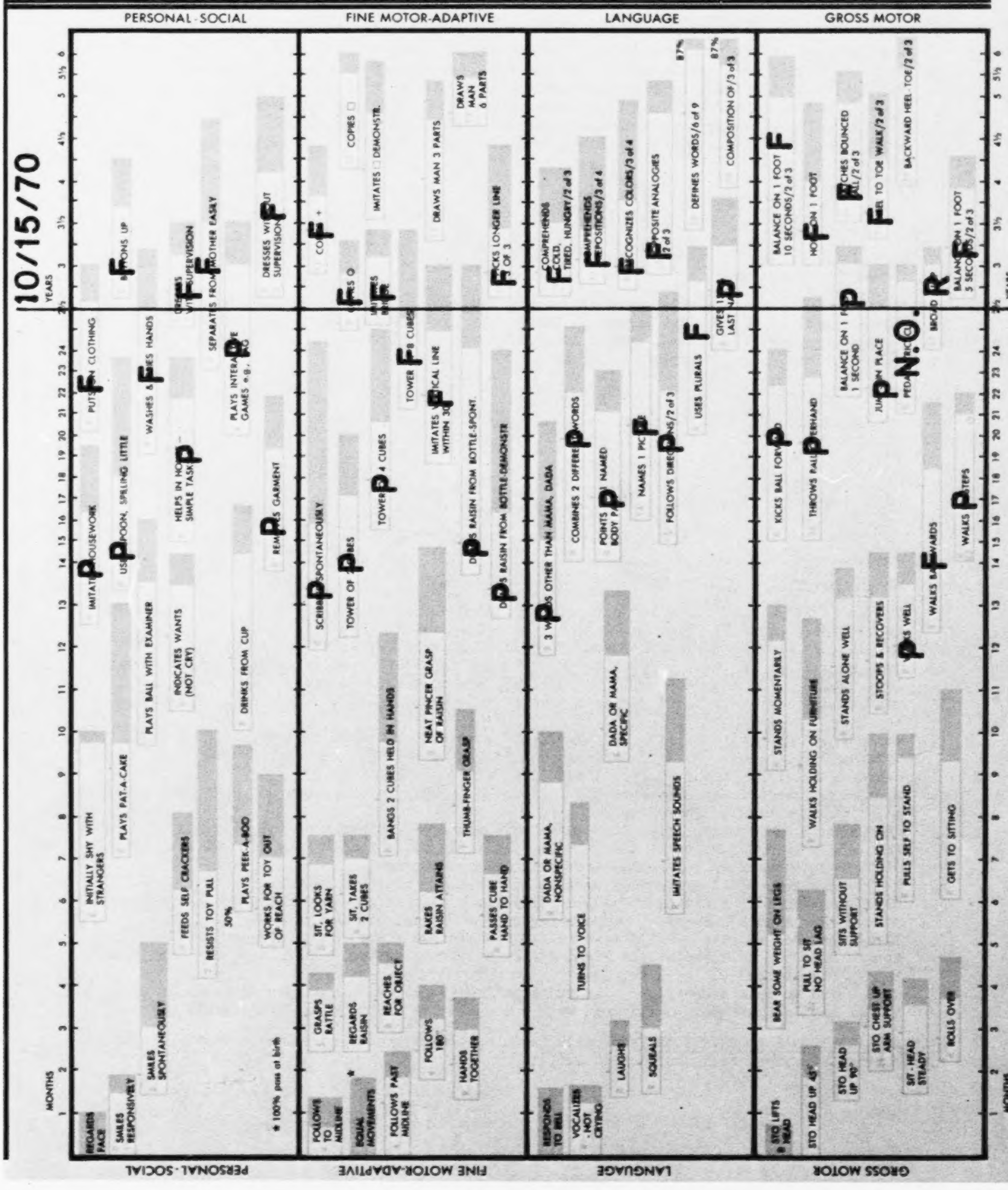
Hosp. No.

Test Form A

STO. = STOMACH
SIT = SITTING

PERCENT OF CHILDREN PASSING 25 50 75 90

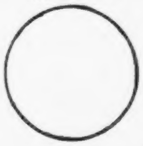
May pass by report
Footnote No. see back of form
Test Item



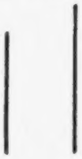
DATE
NAME
BIRTHDATE
HOSP. NO.

DIRECTIONS

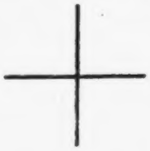
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



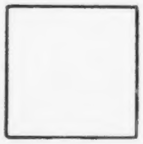
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



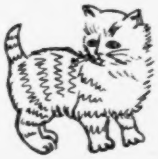
11. Pass any crossing lines.

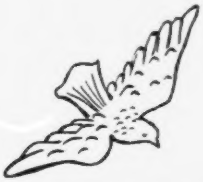


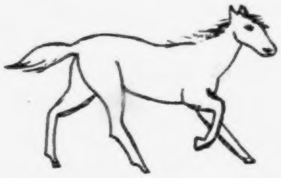
12. Have child copy first. If failed, demonstrate

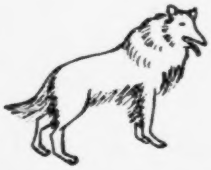
When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

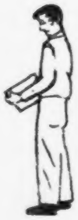
13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)

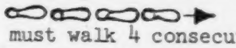
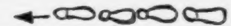










15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

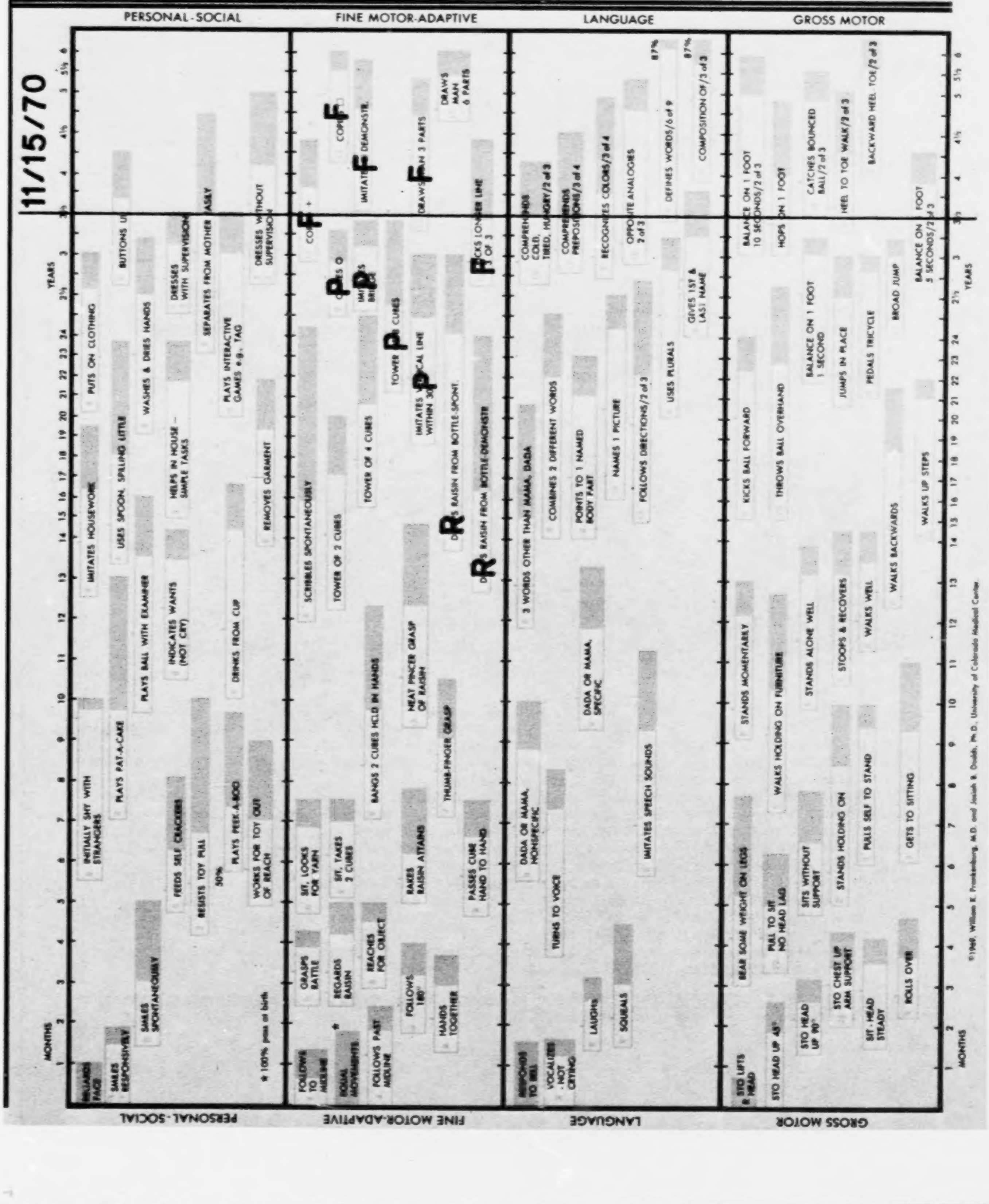
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

PERCENT OF CHILDREN PASSING
25 50 75 90
May pass by report
Footnote No. see back of form
Test Item

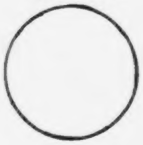
Date **Test Form B**
Name **John Clinton**
Birthdate **5/15/67**
Hosp. No.

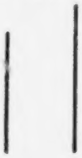


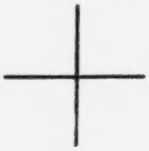
©1969 William K. Frankenburg, M.D. and Josiah B. Dodds, Ph.D., University of Colorado Medical Center.

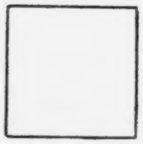
DATE
NAME
DIRECTIONS BIRTHDATE
HOSP. NO.

1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.









9. Pass any enclosed form. Fail continuous round motions.

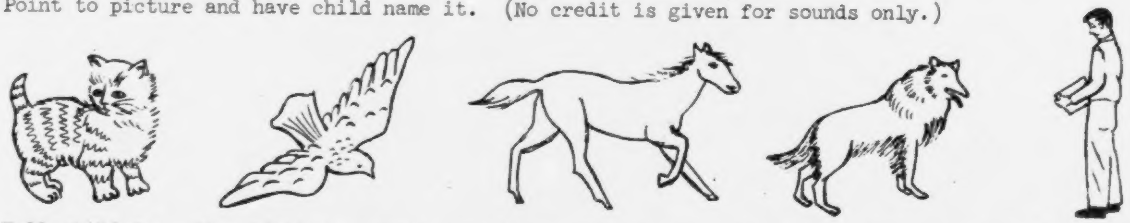
10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)

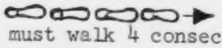
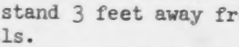
11. Pass any crossing lines.

12. Have child copy first. If failed, demonstrate

When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)



15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

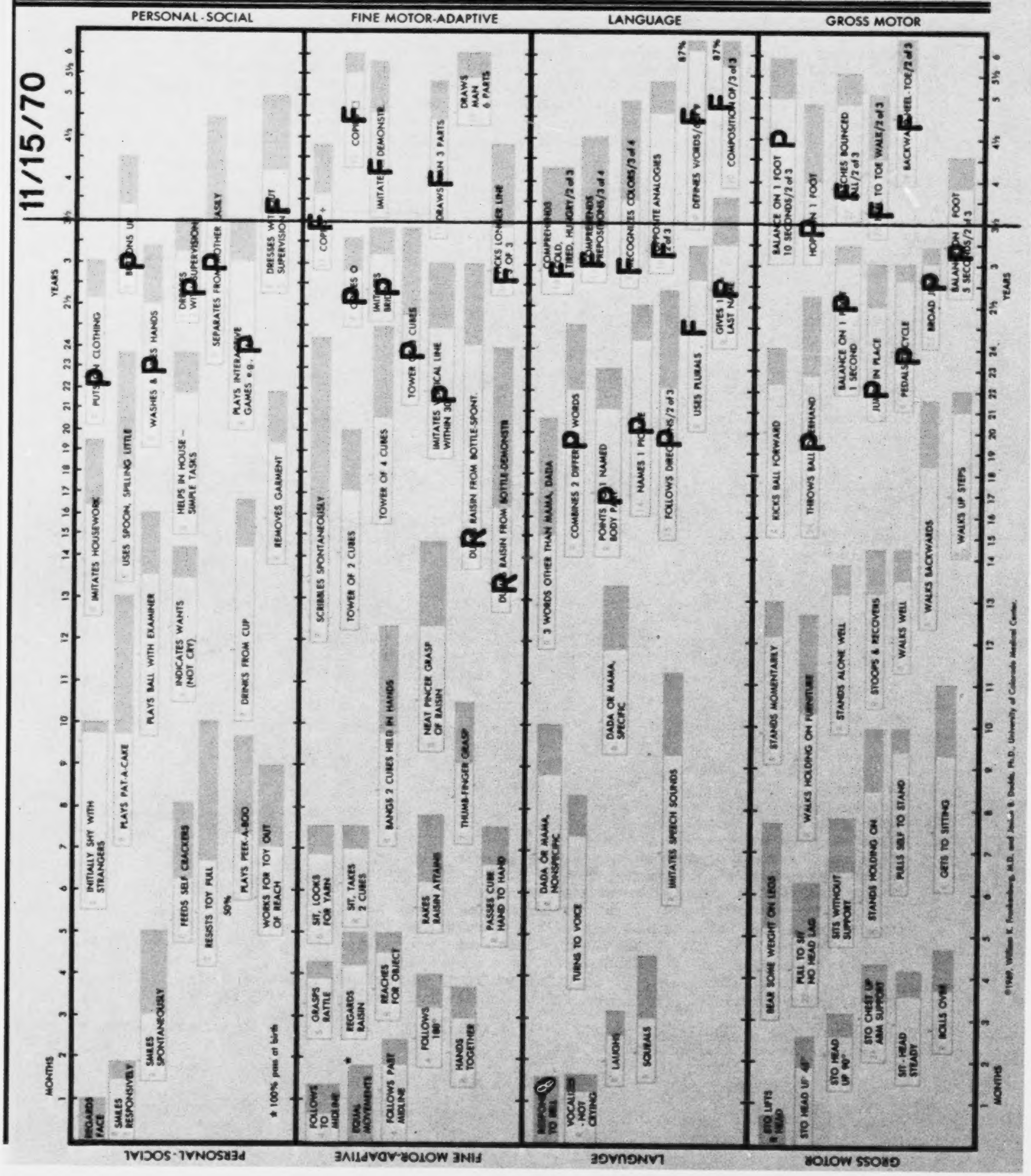
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

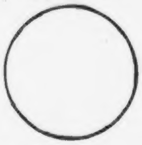
PERCENT OF CHILDREN PASSING
25 50 75 90
May pass by report
Footnote No. - see back of form
Test Item

Date **Test Form C**
Name **John Clinton**
Birthdate **5/15/67**
Hosp. No.

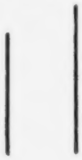


DATE
NAME
DIRECTIONS BIRTHDATE
HOSP. NO.

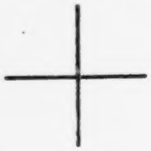
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



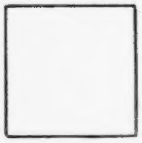
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



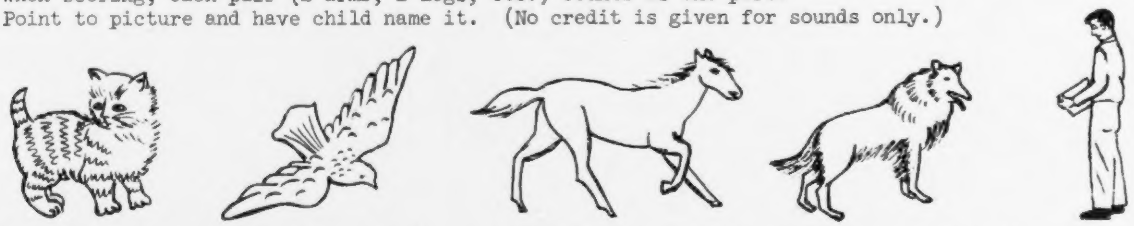
11. Pass any crossing lines.

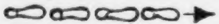
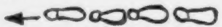


12. Have child copy first. If failed, demonstrate

When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)



15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

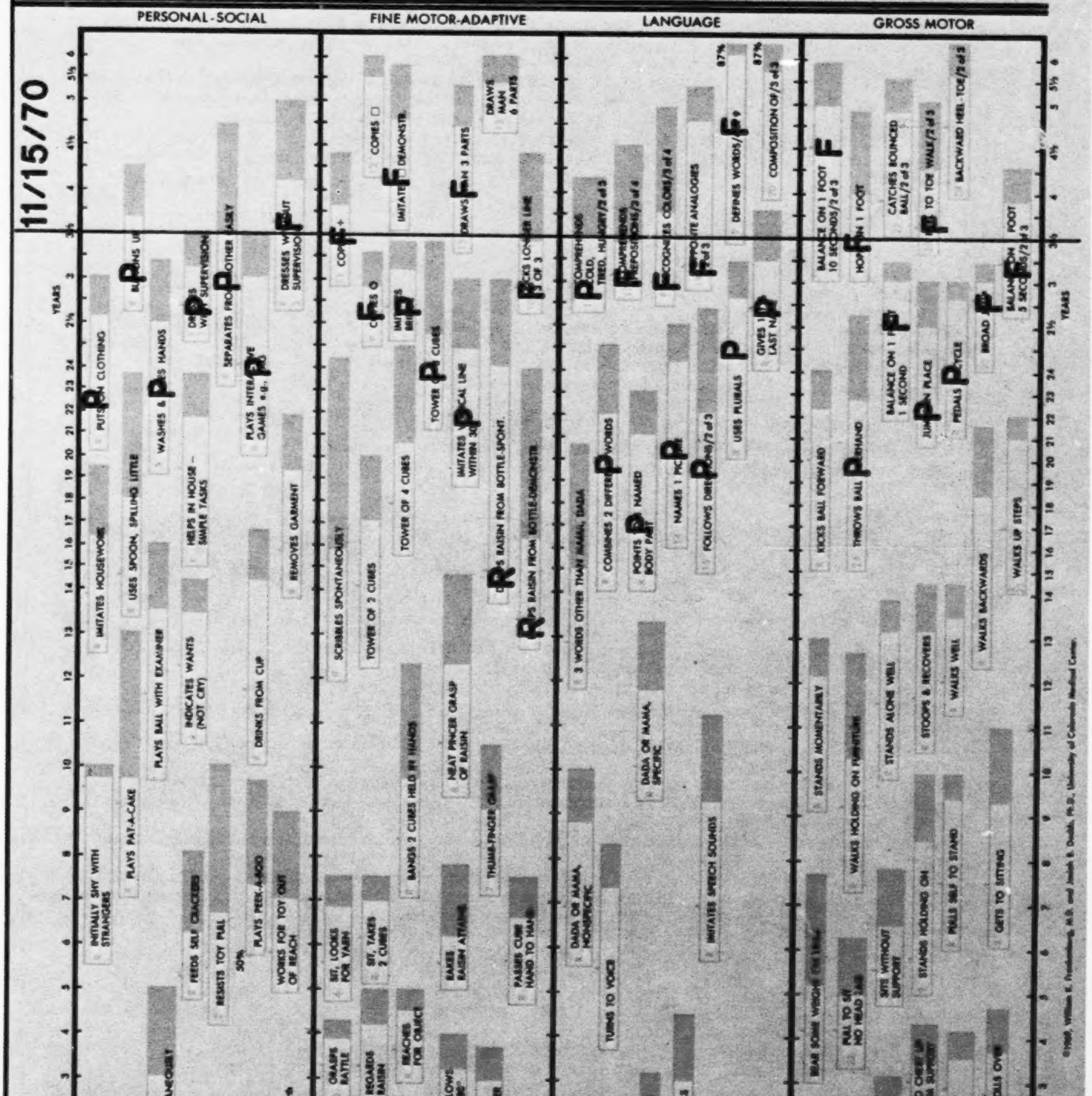
DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

PERCENT OF CHILDREN PASSING
May pass by report — 25 50 75 90
Footnote No. — see back of form
Test Item

Date **Test Form D**

Name **John Clinton**
Birthdate **5/15/67**
Hosp. No.

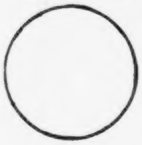


©1969, William K. Frankenburg, M.D. and Josiah B. Dodds, Ph.D., University of Colorado Medical Center

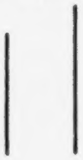
DATE
NAME
BIRTHDATE
HOSP. NO.

DIRECTIONS

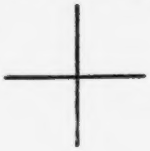
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



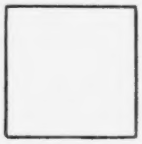
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



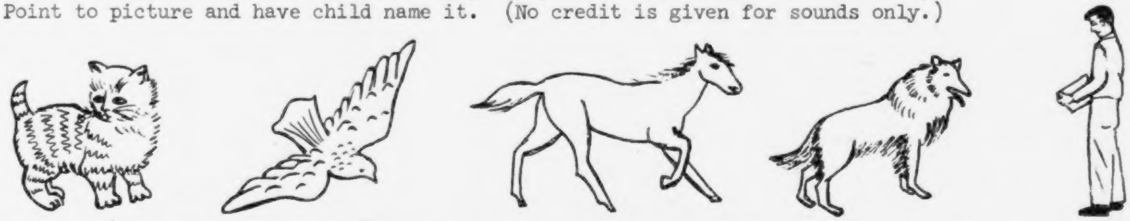
11. Pass any crossing lines.

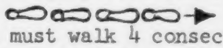
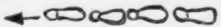


12. Have child copy first. If failed, demonstrate

When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)



15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

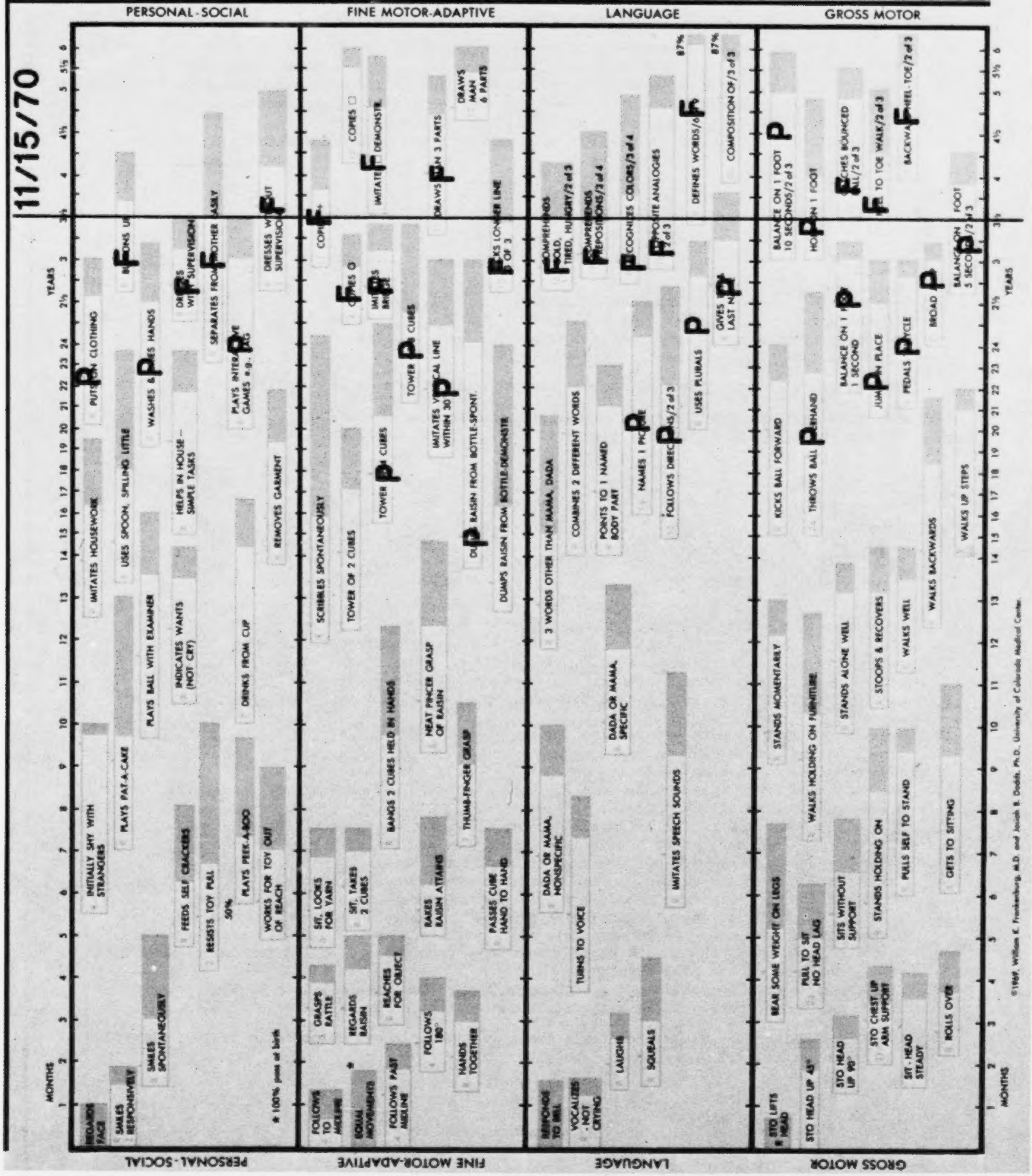
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO. = STOMACH
SIT = SITTING

PERCENT OF CHILDREN PASSING
25 50 75 90
May pass by report —
Footnote No. — see back of form
Test Item

Date **Test Form E**
Name **John Clinton**
Birthdate **5/15/67**
Hosp. No.

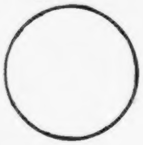


©1969, William K. Frankenburg, M.D. and Josiah B. Dodds, Ph.D., University of Colorado Medical Center.

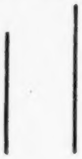
DIRECTIONS

DATE
NAME
BIRTHDATE
HOSP. NO.

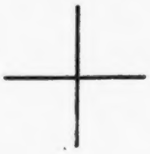
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



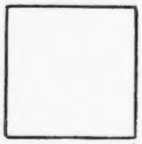
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



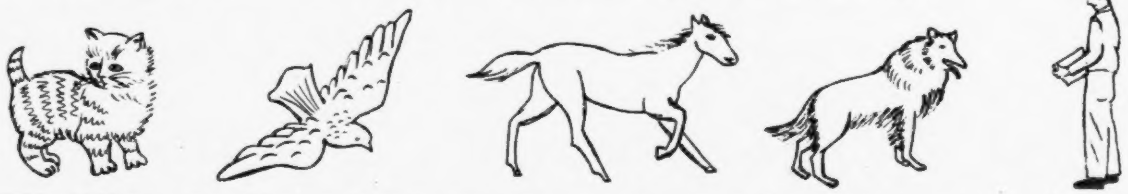
11. Pass any crossing lines.

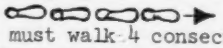
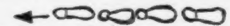


12. Have child copy first. If failed, demonstrate

When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)



15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

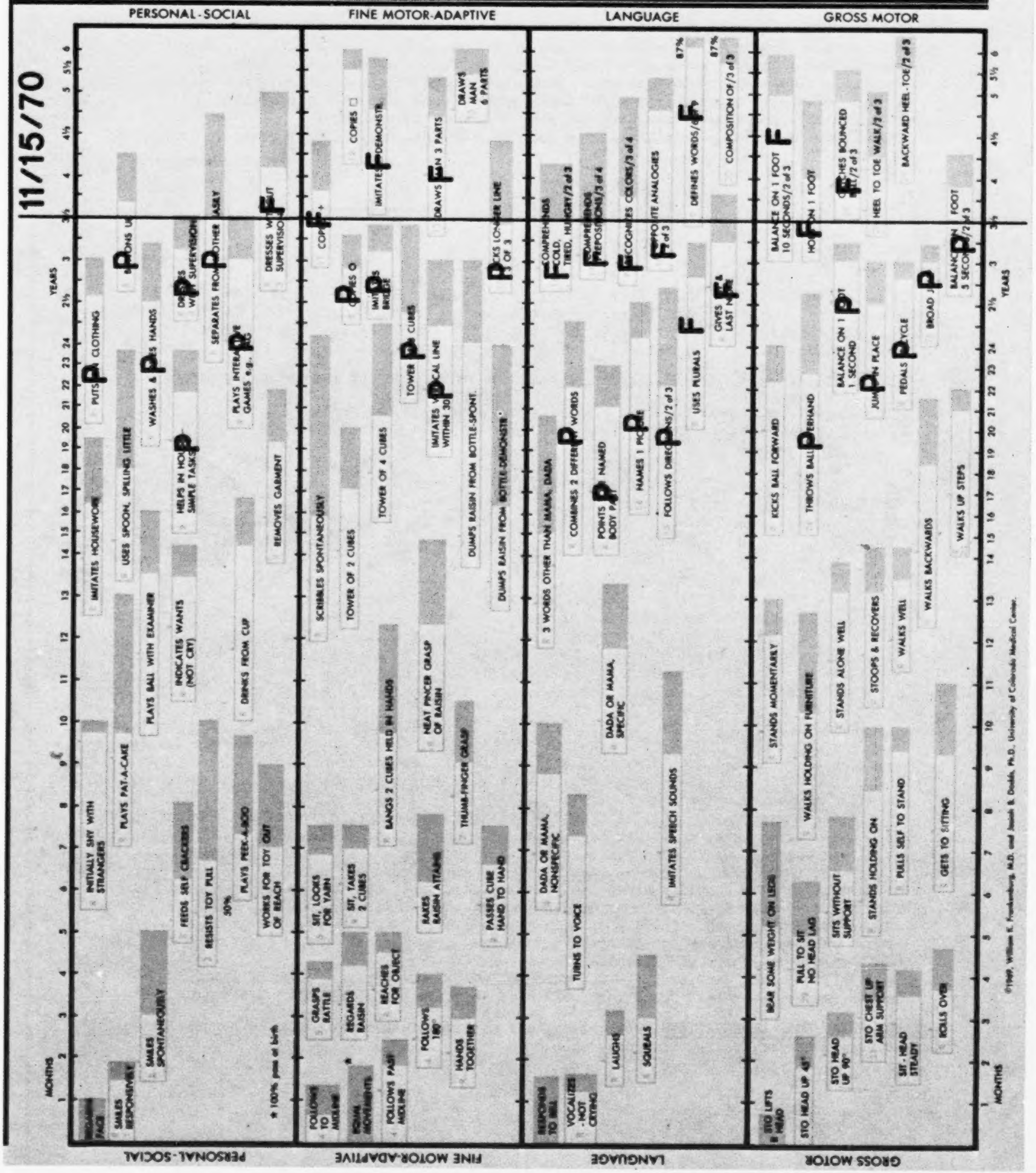
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

PERCENT OF CHILDREN PASSING 25 50 75 90
May pass by report — Test Item
Footnote No. — see back of form

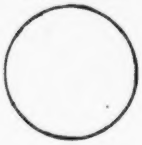
Date **Test Form F**
Name **John Clinton**
Birthdate
Hosp. No.



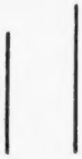
DATE
NAME
BIRTHDATE
HOSP. NO.

DIRECTIONS

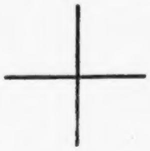
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



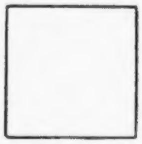
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



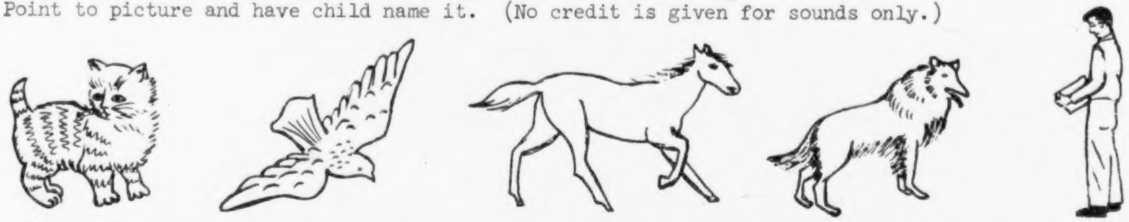
11. Pass any crossing lines.

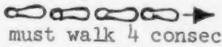


12. Have child copy first. If failed, demonstrate

When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)



15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward, toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

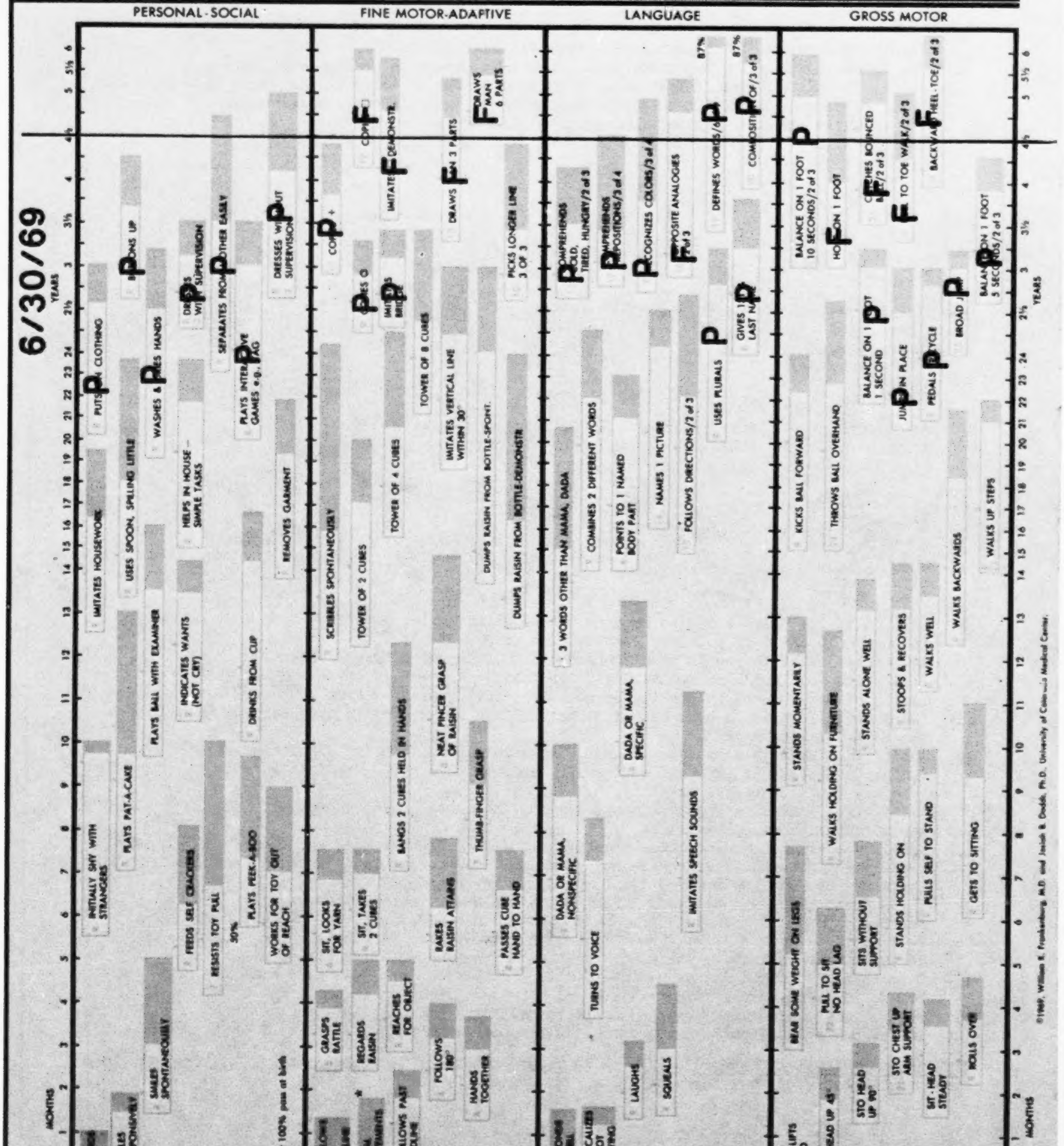
PERCENT OF CHILDREN PASSING 25 50 75 90
May pass by report
Footnote No. see back of form
Test Item

Date **Test Form G**

Name **Bill**

Birthdate

Hosp. No.



©1969, William K. Frankenburg, M.D. and Josiah B. Dodds, Ph.D., University of Colorado Medical Center.

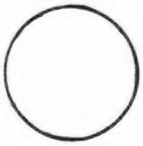
DATE

NAME

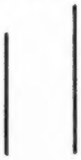
DIRECTIONS BIRTHDATE

HOSP. NO.

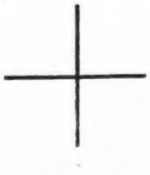
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



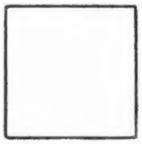
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



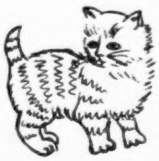
11. Pass any crossing lines.

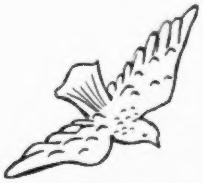


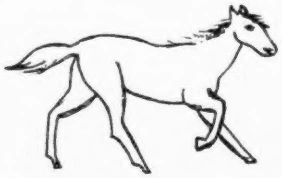
12. Have child copy first. If failed, demonstrate

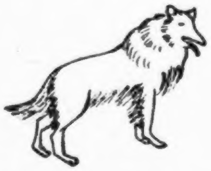
When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

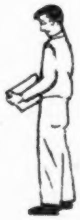
13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)

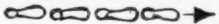
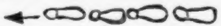










15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

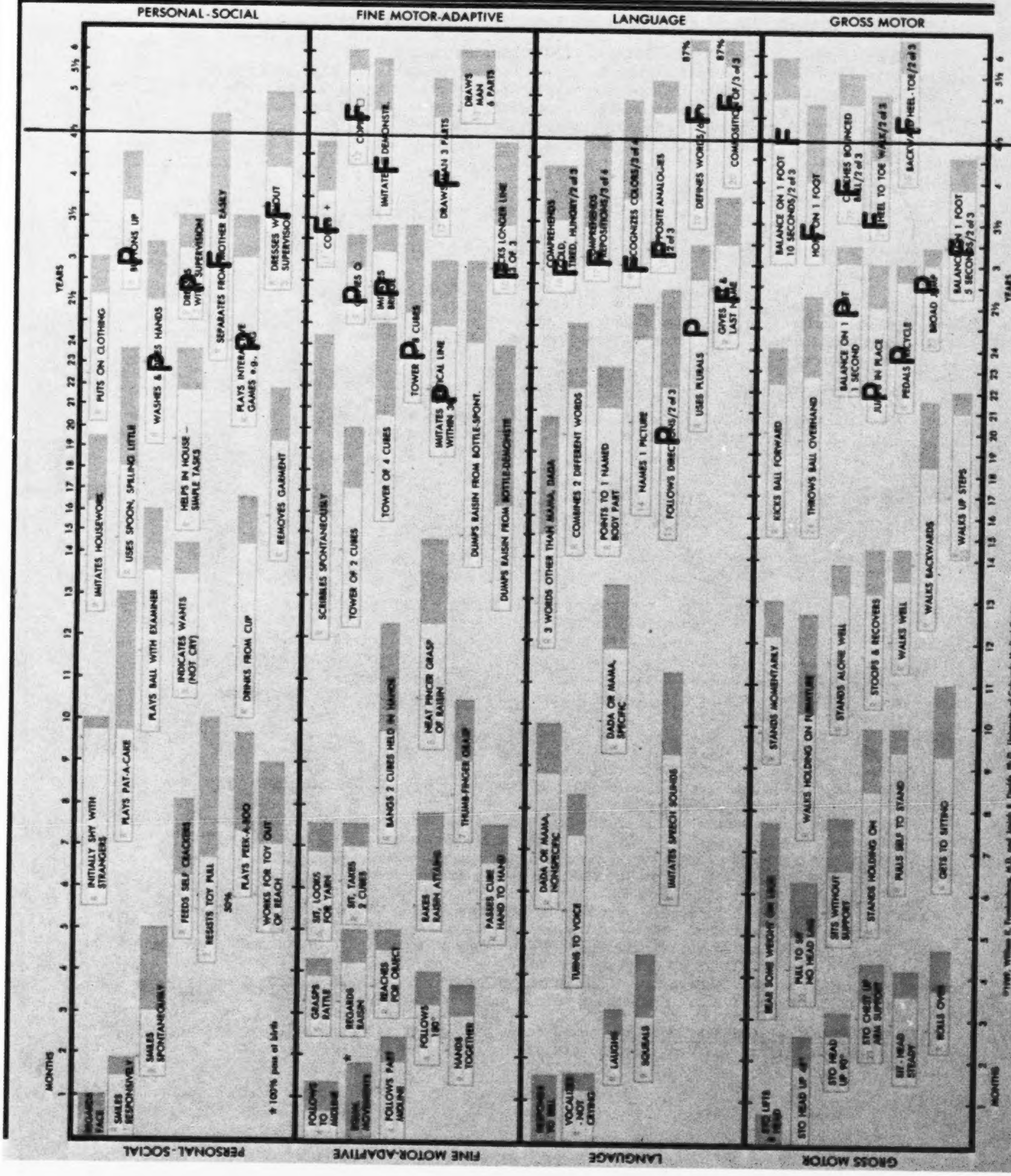
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

PERCENT OF CHILDREN PASSING
25 50 75 90
May pass by report
Footnote No. - see back of form
Test Item

Date **Test Form H**
Name **Paul**
Birthdate
Hosp. No.



DATE
NAME
DIRECTIONS BIRTHDATE
HOSP. NO.

1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
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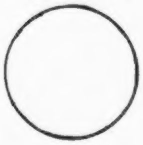
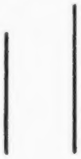
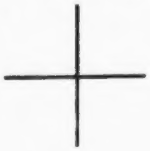
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



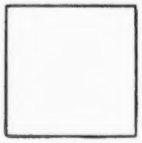
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



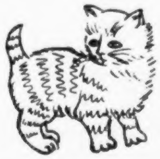
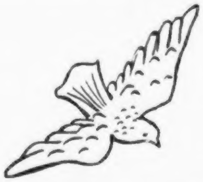
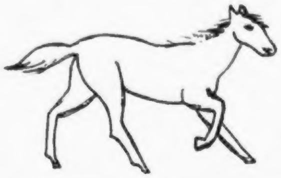
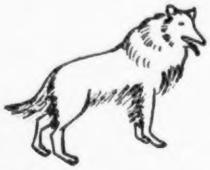
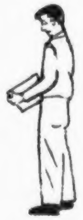
11. Pass any crossing lines.



12. Have child copy first. If failed, demonstrate

When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)

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16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
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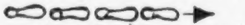
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
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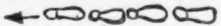
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

CHAPTER 10

MENTAL RETARDATION*

In this chapter you will be learning some of the characteristics of children who are mentally retarded. The chapter will focus on children who are mildly retarded and not on those who are seriously mentally retarded. Those children who are seriously or profoundly mentally retarded are almost inevitably identified as mentally retarded before they reach school age, whereas children who are mildly retarded or of borderline intelligence often become charges of the public school. Regular classroom teachers usually have the best opportunity to identify children who display some of the characteristics of the mildly retarded. Since we will not be dealing with the profoundly retarded, medical aspects of mental retardation and classical clinical syndromes and etiologies will not be dealt with in this course. Instead we will focus on social factors related to mental retardation.

Definition of Mental Retardation

The American Association on Mental Deficiency is an organization of professional people who are concerned with problems of mental retardation. Over a period of many years, the organization has formulated a definition of mental retardation which has come to be the standard and most widely accepted definition of mental retardation. This definition is as follows:

> Mental retardation refers to subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior. (Plate 10.1)

Subaverage intellectual functioning. It should be obvious from the definition that mental retardation is a complex condition consisting of several factors. One of these factors is subaverage general intellectual functioning. This phrase refers to low intelligence and is often regarded as the single most common characteristic of the mentally retarded. Low intelligence is a necessary but not a sufficient condition for the diagnosis of mental retardation. Low intelligence or subaverage general intellectual functioning is only one of the characteristics of mental retardation.

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*The CAI version of this chapter was written by Mr. Judson McCune and Professor Carol A. Cartwright.

Mental retardation refers to subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior.*

***Heber, R.F. A Manual on Terminology and Classification in Mental Retardation, American Journal of Mental Deficiency, rev.ed., 1961, p3.**

Plate 10.1

Intellectual functioning is a phrase which is synonymous with the term intelligence. Intelligence is a hypothetical construct and does not refer to any magic or innate ability. A person's intelligence is measured by the way he functions or the way he performs in testing situations. The way an individual performs in certain situations has been found to be highly predictive of the way he will perform in other situations. In a way, the concept of intelligence or intellectual functioning is a kind of shorthand developed by psychologists and educators to represent a highly abstract way of predicting behavior in various situations.

The most recent thinking about intelligence is that intelligence is not fixed at birth, but is variable according to environmental and other factors. We will use the definition of intelligence as proposed by Robinson and Robinson (1965, page 15).

> . . .As a concept, intelligence refers to a whole class of cognitive behaviors which reflect an individual's capacity to solve problems with insight, to adapt himself to new situations, to think abstractly, and to profit from his experiences. . .

> . . .Furthermore, intelligence, as we use the term, refers to an individual's cognitive behavior as it presently emerges at least when he is making an effort to succeed under relatively favorable conditions at the moment. Intelligence tests are seen as samples of intellectual behavior as it has actually developed in a given individual, an individual who has undergone a specific series of life experiences and no others. . .
>
> . . .Intelligence, furthermore, is an elastic concept which describes quite different sorts of behaviors at different life stages. It is thus a forever-emerging capacity which differs both in quality and in breadth with the individual's age and experience as well as with his constitution.

An individual's intellectual functioning is often referenced by a score on a test. Generally, the score is converted into a figure called the IQ or intelligence quotient. The intelligence quotient refers to the rate of cognitive development. An individual with an IQ of 100 is, by definition, average in this highly abstract hypothetical construct. The IQ of 100 indicates that his rate of congitive development is just average or normal. A person with an IQ 60, however, is said to be developing intellectually at a rate which is slower than normal. An individual with an IQ of 125 is said to be developing at a rate which is faster than normal. This particular concept of intelligence holds true during the developmental period which is defined as the age range from conception to age 16. Expanded definitions of intelligence are required for children who are older than age 16.

Intelligence tests do not provide anyone with a measure of amount of cognitive ability or amount of innate ability. Intelligence tests merely measure what has been learned up to that point in time. Scores of intelligence tests can be converted to the IQ, as indicated above, or in some instances to an estimate of the level of mental development of an individual. This level of mental or intellectual development is often referred to as a mental age. Usually when we think of a child's age we think of a child's chronological age. Chronological age is a child's calendar age or life age. Mental age, on the other hand, refers to a child's level of intellectual development. The mentally retarded child has a mental age which is less than his chronological age. This means that the child will perform academic and learning tasks more like a younger child than a child of his own chronological age. The mentally retarded child with an IQ of 75 who has a chronological age of 12, is said to have a mental age of 9 years. Thus, he would be expected to perform school and academic tasks more like 9 year old normal children than 12 year old normal children.

The intelligence quotient was introduced many years ago as a representation of the ratio between mental age and chronological age. If the mental age can be estimated, then it can be compared with the chronological age. Children whose mental ages correspond with their chronological ages are said to be average or normal and to be developing at an average or normal rate. Children whose mental ages are greater than their chronological ages are said to be developing faster than normal children. These children are said to be brighter or more intelligent than normal children. If a child has a mental age of 10 years and a chronological age of 8, division of 10 years by 8 years and multiplication by 100 would indicate an IQ of 125.

Conversely, those children who have mental ages less than their chronological ages are said to be developing slower than normal children. If a child has a chronological age of 10 years and a mental age of 8 years, he is said to have an IQ of 80. The traditional formula that has been used to calculate IQ scores is as follows: $IQ = \frac{MA}{CA} \times 100$.

It is no longer believed that a person's intelligence is fixed for life at birth. It has been shown in numerous research studies that children's intellectual functioning can be increased or decreased by environmental factors. Given two groups of babies, both alike in all possible ways, those babies placed in an enriched environment will obtain higher levels of intellectual development as measured by most intelligence tests than will those babies placed in impoverished nonstimulating environments.

The words subaverage and the subaverage general intellectual functioning are defined as one standard deviation below the mean on a widely recognized individual intelligence test. The two most often used intelligence tests are the Stanford-Binet Intelligence Test and the Wechsler Intellectual Scale for Children. If a child scores one standard deviation below the mean on one of these tests then it is said that he has subaverage mental ability, at least according to this definition. In the case of the Binet, the score of 84 or below would indicate subaverage ability; according to the Wechsler tests, scores of 85 or below are considered to be subaverage.

Developmental period. The developmental period is the age range between conception and age 16. The definition indicates that the problems associated with mental retardation are first noticed and become apparent during this developmental period. It is believed that mental retardation is closely related to development and that persons do not become suddenly mentally retarded after the age of 16 unless they have suffered a severe brain injury.

Adaptive behavior. Adaptive behavior refers to the ability of a person to make appropriate responses to his environment. A person who is able to respond appropriately to his environment is showing good adaptive behavior. In order to satisfy the definition of mental retardation all three components of the definition must be present. Thus, subaverage intellectual functioning must be associated with impairment in adaptive behavior and the adaptive behavior must be present during the developmental period.

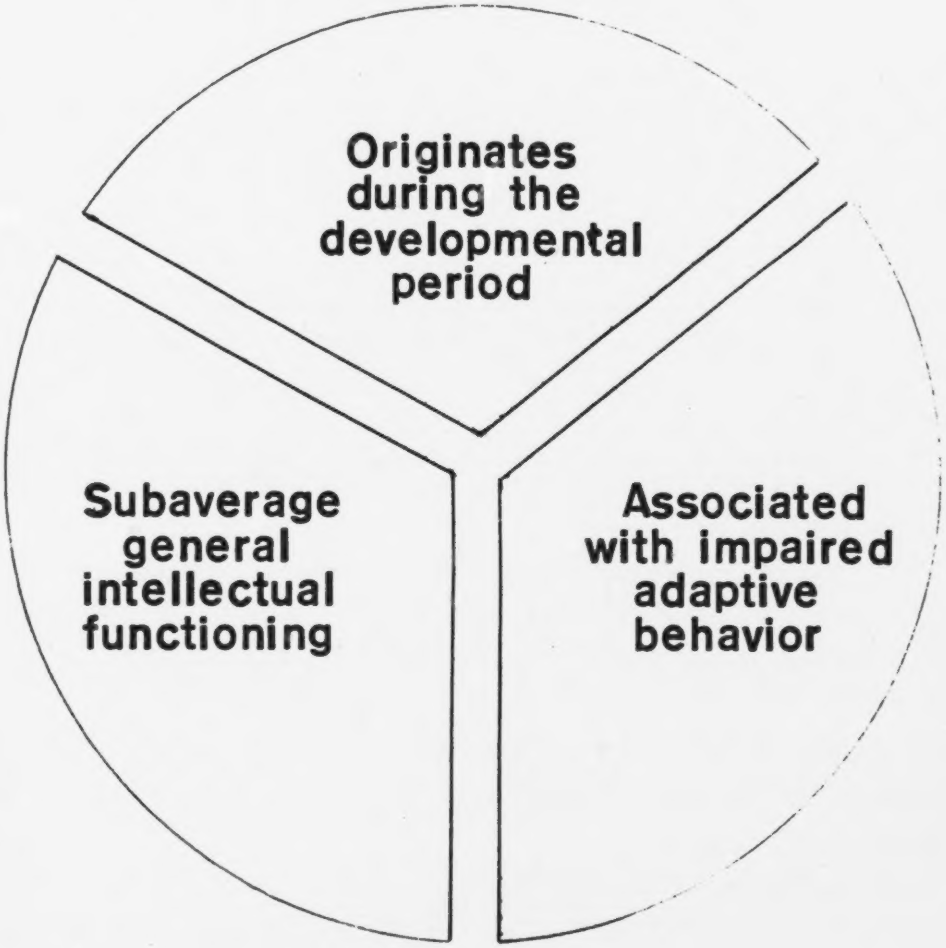
> "Adaptive behavior refers primarily to the effectiveness of the individual in adapting to the natural and the social demands of his environment. Impaired adaptive behavior may be reflected in (1) maturation, (2) learning, and/or (3) social adjustment." (Heber, 1961, pp. 3-4)
>
> Rate of maturation:
>
> ". . .the rate of sequential development of self-help skills in infancy and early childhood such as sitting, crawling, standing, walking, talking, habit training, and interaction with age peers." (Heber, 1961, pp. 3-4)
>
> Learning ability:
>
> ". . .the facility with which knowledge is acquired as a function of experience." (Heber, 1961, pp. 3-4)
>
> Social adjustment:
>
> ". . .the degree to which the individual is able to maintain himself independently in the community and in gaining full employment as well as by his ability to meet and conform to other personal and social responsibilities and standards set by the community." (Heber, 1961, pp. 3-4)

During the preschool and school age years social adjustment is reflected in large measure, in the level and manner in which the child relates to his parents, other adults, and age peers.

Low intelligence and poor adaptive behavior are usually quite highly related. That is, high intelligence usually means good adaptive behavior and vice versa: usually low intelligence means poor adaptive behavior. However, the relationship is not perfect. There are exceptions; certain individuals who have high intelligence have poor adaptive behavior. The mentally retarded individual has low intelligence and makes inadequate, inappropriate, or incomplete responses to his environment.

The important point to remember is that all three factors as shown in Plate 10.2 must be present in an individual in order to consider him mentally retarded.

The Characteristics of MENTAL RETARDATION



Originates during the developmental period

Subaverage general intellectual functioning

Associated with impaired adaptive behavior

Plate 10.2

A Commonly Used Classification Scheme

For years, medical people, psychologists, and educators have used a system for classifying retarded individuals on the basis of measured intelligence. The system uses intelligence quotients as a way of characterizing the degree of mental retardation. The system does not take into account all the factors in the definition of mental retardation. However, its usage is so widespread that it is important to discuss here. Knowledge of the traditional and often used terminology may facilitate communication among concerned professionals. The net effect of this classification scheme is the attaching of a label to children who fall into various IQ ranges. Unfortunately the label does not provide sufficient information about a child's specific strengths and weaknesses to be of much assistance in the educational process.

Custodial mentally retarded. Some mentally retarded children and adults are not able to care for their bodily needs. They can't dress themselves, use the bathroom, or feed themselves. Many of them are invalids. We refer to these cases as custodial cases. These children do not attend public schools. They are usually identified at birth and require complete custodial care in institutions throughout their lives. They are the lowest portion of the distribution of intelligence. Generally, their intelligence level, if measurable, is less than 25 or 30. In the distribution of intelligence shown on Plate 10.3, these individuals would fall in the left-most tail of the distribution or as designated by the letter A.

Trainable mentally retarded. The portion of the distribution of intelligence labeled as B in Plate 10.3 represents an IQ range of approximately 25-30 to 55-60. Children who have IQ scores in this range are called trainable mentally retarded. Children in this group are usually not expected to develop academic skills such as elementary level reading and arithmetic. The goals of educational programs for trainable mentally retarded are self-care and social adjustment abilities in a supervised environment. Occasionally one of these children will not be identified until he reaches first grade but usually these children are identified by their parents or physicians before they reach school age. In general these children are much slower to learn to walk and talk than normal children. Trainable mentally retarded children have limited capacities to generalize and are usually quite deficient in language abilities. It is unlikely that children in this range will ever be able to become completely

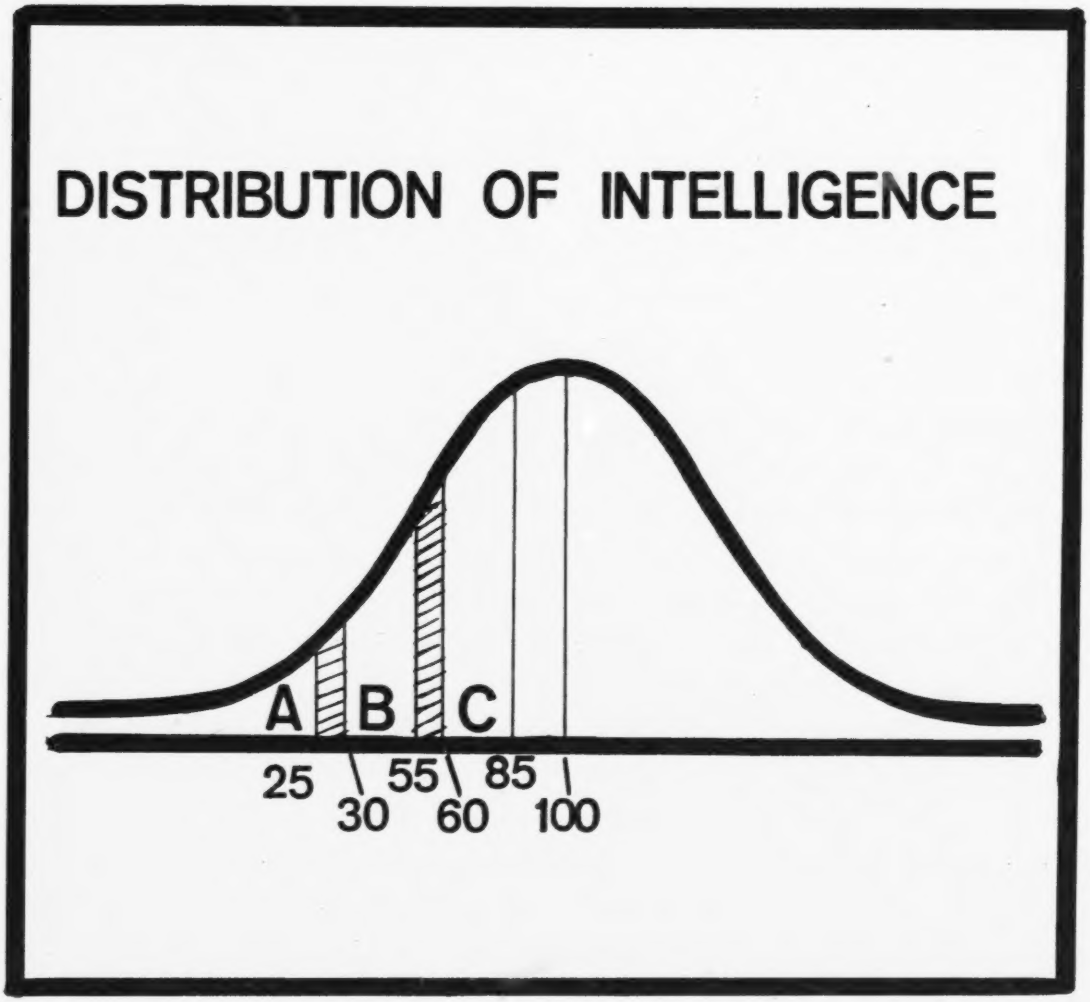


Plate 10.3

self-supporting and independent members of society. Consequently, some special provisions usually need to be made for these children. Many of these children are able to take care of their bodily needs and get around their own neighborhoods without too much difficulty. Some of them do require institutional placement. Many of these children can eventually learn to work in sheltered workshops as adults.

Educable mentally retarded. The third classification group is called the educable mentally retarded. The letters EMR are often used to identify this group. EMR children represent the largest group of mentally retarded individuals. On the distribution of intelligence shown on Place 6.3, group C represents the EMR group. It is this group of children that usually makes up the special classes of the mentally retarded that are often found in public school systems. EMR children are usually identified by regular classroom teachers during the first and second grades. In many cases these children are not identified before they reach the public schools. Some people use the term slow learner to classify children who have measured intelligence slightly higher than the educable mentally retarded. Traditionally, children having IQ's in the range 75 to 90 were classified as slow learners.

Classification schemes based solely on IQ are not very satisfactory. Children in the IQ range 85 to 90 might be classified as slow learners in one situation or school district but not in another. In a school or community in which most children have relatively high IQ's and achievement, 75 to 90 would probably be below the average of most of the children. In another school or community in which most children have relatively low IQ's and achievement, 75 to 90 would probably be thought of as just about average or normal.

Identification and Diagnosis of Mental Retardation

Four major sources of referral are shown in Plate 10.4. These sources are those most likely to suspect that a child has problems and are the ones most likely to refer the child for further examination.

Parents usually have the first opportunity to study the behavior of their own children. With more opportunity to observe deviant behavior parents often make the initial referral of a child to the family doctor. It is more likely that parents will identify severely retarded than educable or slow learning children.

The family doctor often discovers symptoms of mental retardation and refers a child to a specialist for further diagnosis.

A third source of referral and possible identification of handicapped and retarded children is in the public agencies. Parents often go to public agencies for help for a variety of problems. Personnel in public agencies may refer a child for further diagnosis by a specialist or there may be specialists within the public agency who can provide a diagnosis of mental retardation.

Finally, teachers of elementary school children are excellent sources of referral and identification of handicapped children. The teacher is in a unique position to observe many different children in similar situations and can often note differences in children that should be studied.

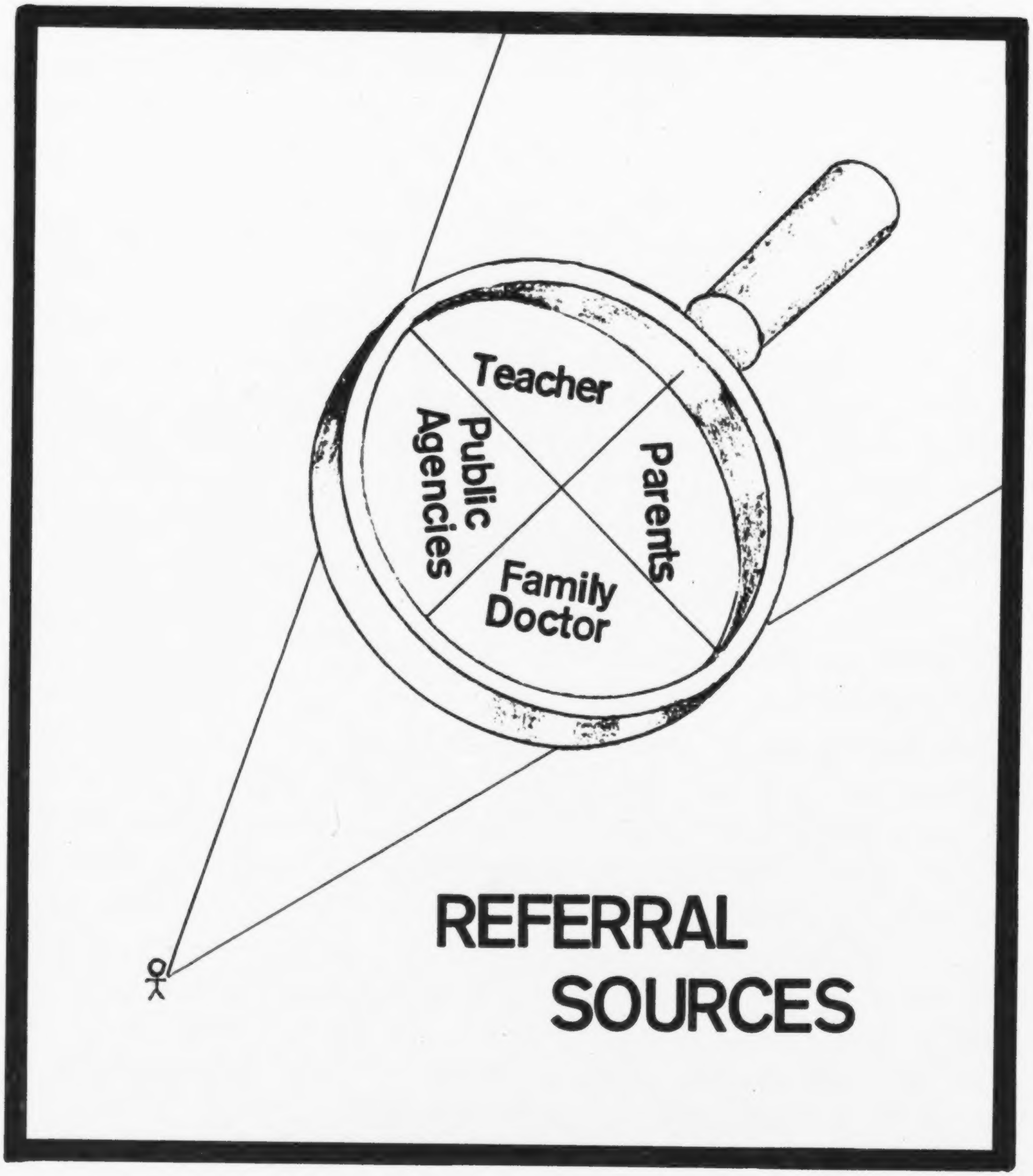

Teacher
Parents
Family Doctor
Public Agencies
REFERRAL SOURCES

Plate 10.4

In general, teachers, parents, and family doctors do not make a firm and final diagnosis of mental retardation. Specialists such as psychologists, social workers, and physicians specializing in mental retardation usually make a full examination of a child before diagnosing a child as definitely mentally retarded.

There are some sticky legal issues involved in the official declaration that a child is "legally mentally retarded." Different persons in different counties and states are legally authorized to certify that a child is "legally mentally retarded" for purposes of welfare, cost reimbursements, admission to state institutions or special classes, tax relief, etc., The specialist with whom you are most likely to work in a school situation is a certified school psychologist. School psychologists usually make the decision as to whether or not a child will be placed in a special class.

There are several factors that are usually considered by specialists in their diagnosis and evaluation of children who might be mentally retarded. These factors are reported in Plate 10.5. Notice that the score on an intelligence test is only one of several factors considered in the diagnosis of mental retardation. Also, note that the other factors are parallel to those in the definition of mental retardation.

Plate 10.6 illustrates that teachers can use the same factors to structure information about children who might be mentally retarded. An IQ score might not be available or easily accessible to most classroom teachers. Consequently, emphasis should be placed upon the other three factors.

Development refers to the child's progress from one skill to the next. In general, retarded children lag behind their normal peers in almost all developmental tasks. The more severe the mental retardation the greater the lag. As an example, look at the developmental task illustrated on Plate 10.7 The age line is represented in months on the plate. The box at the extreme right indicates that on the average the children usually will bear some weight on their legs between the ages of 3 and 7-1/2 months. In general, mentally retarded children complete various tasks later than intellectually normal children of the same chronological age. Differences in completion of these tasks are less pronounced for slow learning and educable retarded children than for the more severely retarded.

As you might expect, most mentally retarded children function below average in learning situations when compared with children of their own chronological age.

Factors Considered by Specialists in the Diagnosis of Mental Retardation

1. Score on an intelligence test (usually individually administered)
2. Developmental comparisons with others of the same CA
3. The ability to function in learning situations such as those in most classrooms
4. Social adaptability

Plate 10.5

Finally, the mentally retarded child is probably less adaptive in social situations than is the normal child.

Intellectual Functioning of Mentally Retarded Children

In general, retarded children have intellectual functioning which is below that of normal children. An IQ score of one standard deviation or more below the mean in an individual intelligence test is regarded as subaverage intellectual functioning. Psychologists use an individually administered intelligence test to try to estimate the rate of intellectual development in children. Occasionally, classroom teachers are asked to administer group intelligence

Information Needed by Teachers to Make Referrals to Diagnostic Personnel

1. IQ score on intelligence test (usually a group test)
2. Developmental comparisons with others of the same chronological age
3. The ability to function in learning situations
4. Social adaptability

Plate 10.6

tests in order to get estimates of intellectual functioning in the children in their classes. Theoretically, the group and individual tests measure the same hypothetical construct. However, individually administered intelligence tests have proven to be more reliable and valid in predicting the future success of children in school.

The relevant points related to the intellectual development of retarded children has already been summarized in preceding sections of this chapter. In practice, the score on an IQ test is the factor that is most often used to make a decision about mental retardation. In fact, in far too many instances, it is

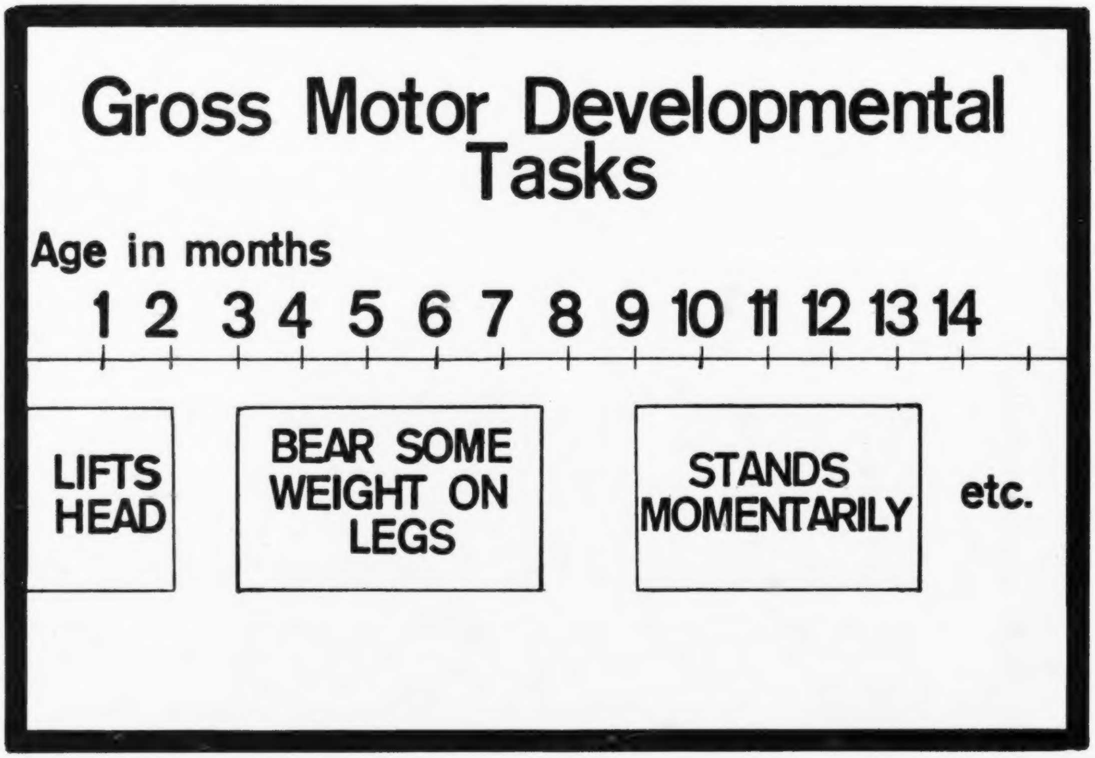

Gross Motor Developmental Tasks
Age in months
1
2
3
4
5
6
7
8
9
10
11
12
13
14
LIFTS HEAD
BEAR SOME WEIGHT ON LEGS
STANDS MOMENTARILY
etc.

Plate 10.7

the only criterion used in the evaluation of mental retardation. This is an unfortunate situation in that children can be placed in special classes for the mentally retarded based on a single one-hour test. There are many factors that can depress a child's score on an IQ test on any given day. It is a sad fact that too many children have had bad days when taking intelligence tests and have been inappropriately placed in special classes for the mentally retarded. Reevaluation of children in special classes often does not occur for several years. Thus, placing a child in a special class for the retarded when he is not retarded can be a very serious educational error.

Developmental Characteristics of Mentally Retarded Children

There are two important generalizations which can be stated with considerable confidence. They are as follows:

1. In general, retarded children do not develop as fast as normal children.
2. Retarded children do not progress or develop to the same levels as normal children.

In terms of school performance, retarded children usually will not be able to go as far in school as normal children. That is, they will reach a lower intellectual and academic level than normal children. Furthermore, their rate of progress to the ultimate level is generally slower than than of normal children. Thus, it will take them longer to reach a given level of development than normal children.

Retarded children do not mature as fast or grow as fast as normals. They usually lag behind normals at the major developmental milestones, such as crawling, walking, and talking. The more retarded the child, the more likely it is that he will be late in attaining the developmental milestones.

Caution. Some normal children are slow to begin walking and talking also, so do not put too much faith in a single developmental lag. Children show a wide range of variability and individuality in areas such as gross motor skills, language development, and other areas in which development can be compared. Thus, the generalizations listed above should be treated as such: generalizations which are subject to exceptional cases. Remember that one should not label a child as having a particular disability such as mental retardation just because he shows one symptom or behavior associated with that disability.

In general, developmental lags are correlated; that is, retarded children usually fall behind normal children in several developmental areas. Also, it is unlikely that a retarded child would be greatly superior to normal children in one or several areas and inferior in one or two areas.

On the average then, the level of development of retarded children will be more like that of younger children than of normal children of the same chronological age. Retarded children are more retarded or below average in such areas as intellectual, academic, and language development than in physical growth and development. Language development and intellectual ability are highly correlated. In fact, some intelligence tests are completely verbal or language oriented. Some research studies have shown that special programs that concentrate on language development can increase intellectual ability of children provided that 1) the program is given to very young children, and 2) the children are not severely retarded. In general, the earlier in a child's life that a program is initiated, the greater are the possibilities for intellectual gain. Special programs for young children are often called early intervention programs. Many child development specialists believe that some basic personality and learning traits may be fairly well established by the time a child enters school. They believe special programs should be started with certain high risk children before the child's third birthday. In other words, early identification of handicapped children is essential.

Chapter 9 presents information about the Denver Developmental Screening Test which can be used for the early identification of handicapped children. This instrument can be used to obtain information on developmental comparisons of young children from the ages of 2 weeks to 6-1/2 years.

In summary, the mental, physical, and emotional development of retarded children is lower in rate and level than the development of normal children of the same chronological age. Of those three areas, normal and retarded children of the same chronological age tend to be more alike in physical development than in language and mental abilities

Learning Characteristics of the Mentally Retarded

Description of the learning characteristics of any child or any group of children will vary depending upon the definition of learning that is used. There is little agreement among learning specialists as to the most useful definition of learning. We will not become embroiled in this controversy. Instead, we will attempt to give you some ideas of the most striking differences between normal and retarded children in learning ability.

Rate of learning. The most striking difference between normal and retarded children in learning characteristics is that retarded children do not learn as fast as normal children. In general, retarded children take longer to reach the same level or criterion than normal children do.

Level of learning. Retarded children do not seem to be able to go as far in the learning and schooling process as normal children. Most retarded children do not graduate from high school. Few will achieve in school above approximately a 6th grade level.

Rate of forgetting. Once information has been learned, the retarded child will tend to forget the information sooner than normal children provided that the children do not have the opportunity to practice that which is learned. If intermittent practice is given, there is evidence that retarded children will retain and remember information once they have overlearned it. For example, retarded children rarely forget their own names simply because they use the names often.

Transfer of learning. Retarded children often have trouble transferring learning from one situation to another. A skill or concept may be learned and applied appropriately in a given situation but not applied appropriately or at all if the situation is slightly changed or an entirely new situation arises.

Concrete vs. abstract. Most authorities agree that retarded children perform better on tasks and learning that are straightforward and concrete rather than highly abstract.

Incidental learning. Retarded children often do not acquire information which is peripheral or incidental to the main point of attention. The retarded child does not seem to be able to handle as many different pieces or kinds of information at one time as a normal child can. Consequently, information which is not directly relevant to the task the child is performing may not be acquired.

Verbal learning. Since verbal learning and language is so highly related to intelligence, it is obvious that retarded children will have more difficulty learning language and performing tasks related to verbal learning than will normal children. When the use of language is involved in a learning task, the mentally retarded often have difficulty. Retarded children usually do not use verbal mediators as well as others do. Most mentally retarded children lack spontaneous mediation abilities. The poor language abilities may result in the child not being able to follow directions appropriately. In fact, some tasks may be performed poorly not because the child does not how to do the task but because he did not really understand the directions about what he was to do.

Learning set. The ability to profit from experience and to generalize is poor for retarded individuals. Therefore, it takes more time for the retarded to form a learning set than for normal persons. A learning set is a systematic method of tackling a problem. When a person successfully tackles a problem he uses a series of steps to reach a solution. After a number of successful experiences with the same general series of steps, the person comes to use the series whenever he is in a problem-solving situation. Thus, he has a learning set. A retarded child often has difficulty determining the best solution to a problem and acquiring a learning set.

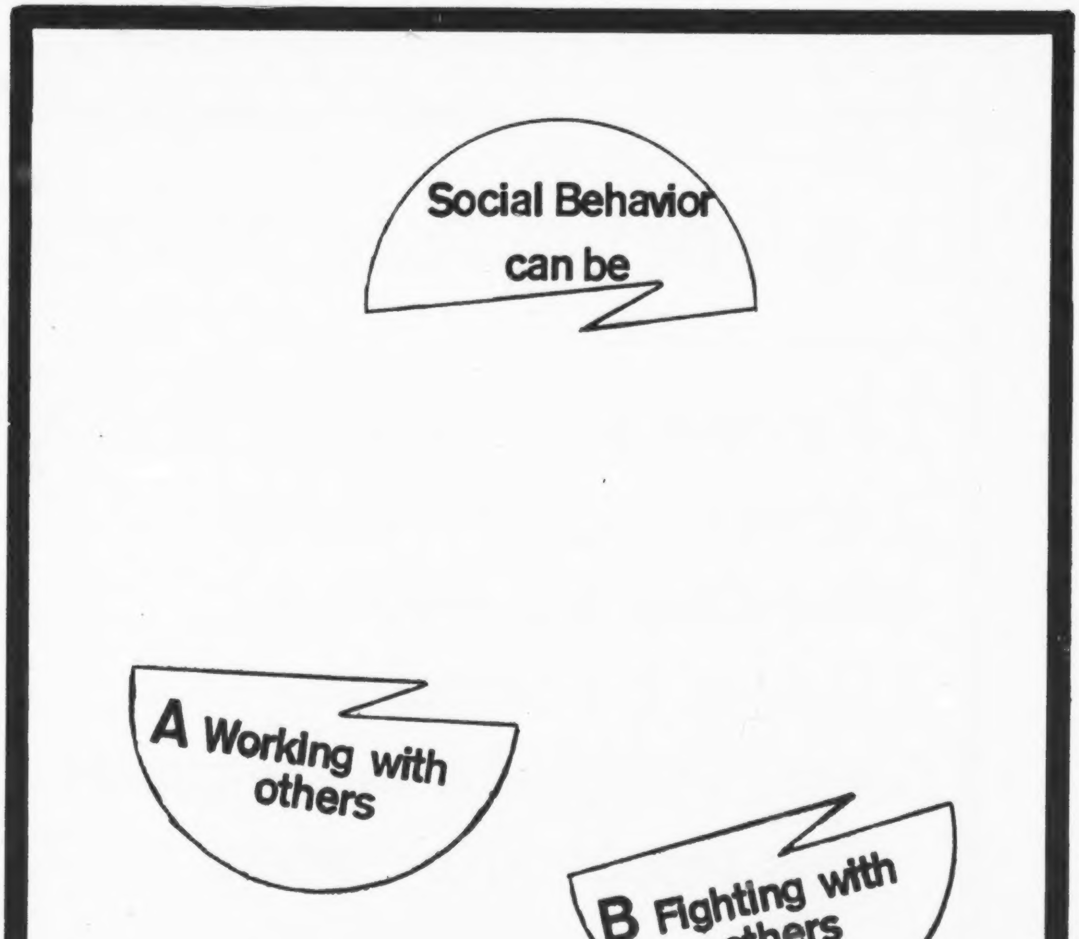
Social Adaptability of Retarded Children

Social behavior means more than the ability to introduce someone properly or to use the right fork in a formal dinner. Social behavior is defined as an interaction between two or more people. Notice the stress on interaction and people. Social behavior can mean a variety of behaviors or interactions between persons and is not limited to talking or conversation. Some social behaviors are represented in Plate 10.8.

Steps in the interaction process. The concept of interaction has been used to represent one important factor in social behavior. There are five important steps in the interaction process. First, a person must perceive the behavior of others. This perception may be through sight, sound, touch, taste, or any combination of the senses. The second step of interaction is for the person to interpret the behaviors of others. The third step of interaction is for the person to select a response from among several he may have. Of course, the person cannot select a response that he does not have. The fourth step is for the person to actually make a response. The response may be made either verbally or physically. In the fifth and final step, the person interprets how his response was perceived by others. The steps of the interaction process are summarized in Plate 10.9.

As an example consider the situation in which Mr. Jones, the third grade teacher, is having a small group session with several children and is drilling the children on the capitols of states. The teacher asks John, "What is the capitol of Pennsylvania?". The first step of the interaction process occurs when the subject, John, perceives the behavior of others; in this case, the behavior is the teacher's question. In the second step John interprets the behavior and in the third step he selects a response. Observable behavior of John occurs when he makes the response to the question. Note that the first three steps cannot be directly observed but must be inferred from the situation. The fifth step occurs when John interprets how the response was received by the teacher and others.

Note the similarity of the interaction process to the information processing model. The first step, perception of behavior, occurs when the input channel is activated and information is received. The second step, interpretation of the behavior, and the third step, selecting a response, occur in the information



Social Behavior can be

A Working with others

B Fighting with others

C Playing with others

D Talking with others

Plate 10.8

THE INTERACTION PROCESS

1. Perceiving the behavior of others
2. Interpreting the behavior
3. Selecting the response
4. Making the response
5. Interpreting how the response was perceived by others

Plate 10.9

processing unit. The fourth step, making a response, is performed by the output unit. In this case, vocalizing a response. The fifth step is the monitoring and feedback loop.

To carry on with the example: in the first step John hears the teacher say, "John what is the capitol of Pennsylvania?"

During the second step John interprets the teacher's question and relates it to his own system of thinking or processing information. He must attempt to comprehend the teacher's question.

During the third step, John mentally rehearses the various possible responses that he might make before he finally selects a response that he considers is appropriate for the situation. There is a variety of responses that

John might make. He might make the right response, viz., "Harrisburg"; he might sit quietly and do nothing; he might start to cry; or he might respond "Albany". If John is actively involved in the interaction process he will make some kind of a response and then observe to see how others react to his response. Then the others may go through the steps in the interaction process. The teacher may respond to John's response of "Harrisburg," by saying "Yes, that is absolutely correct." or, he may respond to John's response of "Albany" by saying, "No, John, that is the capitol of New York."

In turn, John will react again to the teacher's response to his response. Thus, the interaction process will be carried out time and time again in a short space of time.

The preceding example has been simplified in an attempt to present the basic elements of the interaction process. Of course, you are well aware that social behavior is not always as simplistic as we have implied in the example. There are many other factors that may affect the interaction process. Many times the people involved in the interaction process are not aware of these other factors.

Using the interaction process to identify handicapped children. The main purpose in presenting the description of the interaction process is to provide additional information that might be helpful in the identification of handicapped children. Note that of the five steps in the interaction process, only one is a behavior that can actually be observed. That behavior is step number four: making a response. The other four steps must be inferred. In an academic or school situation, or even in a play situation, a child is often interacting with others. If the child appears to make maladaptive or inappropriate responses, ask yourself the following questions:

> 1. Is the child accurately perceiving the situation? If the child is making inappropriate responses or behaviors, perhaps he is receiving inadequate or distorted information because of problems in visual or auditory channels. Perhaps his vision is impaired, or he cannot always hear all the important elements of the situation.
>
> 2. Is the child capable of correctly interpreting the situation? Is he capable of identifying the relevant elements or components to the situation? Perhaps the child is misinterpreting the behavior of others or is not interpreting the situation adequately because of low intelligence or emotional problems, or a variety of other problems that may influence adequate information processing, storage, and retrieval.

3. Is the child selecting the appropriate response for the situation? If a child seems to be intellectually capable of making the right response to a given situation, but invariably makes the wrong or inappropriate response, some emotional problems may be interfering with his ability to select the correct or appropriate response.

4. Is the child making inappropriate responses because of problems in the output channels? That is, does the child have a speech or motor problem which would prevent him making the right response even though he has correctly interpreted the situation and could make the correct response otherwise. It is not uncommon for children and adults who stutter to make inappropriate or incorrect responses because the correct response is difficult for them to make. For example, in response to the question, "What very large city in Western Pennsylvania is world famous for its iron and steel mills?," a stutterer might respond, "I don't know" or "Scranton" because he has a difficult time pronouncing the word "Pittsburgh."

Summary of Mental Retardation Chapter

The chief characteristic of the retarded child is his inability or his poor ability to store, process, and retrieve information as readily as other children. Consequently, he is usually at a disadvantage in interactive and academic situations when compared with normal children. The retarded child is less adaptive in social situations than normal children. Also, his ability to function in learning situations such as those in most classrooms is below average when compared with normal children of his chronological age. On the average, retarded children lag behind normal children in most developmental tasks such as walking and talking. Furthermore, on the average, retarded children are slightly below average in height, weight, and motor ability. Retarded children invariably score below normal children on most intelligence tests.

It is extremely difficult to summarize what is known about mental retardation. The following summary statements are offered strictly as generalizations. Caution must be taken not to overgeneralize and to recognize that there are always exceptions to every generalization.

Mentally retarded children are likely to be below average in most areas of mental development when compared with normal children.

Mentally retarded children perform at a level which is more closely related to their mental than to their chronological ages.

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CHAPTER 11

THE DISADVANTAGED*

Introduction

The inclusion of the disadvantaged in this special education course is a reflection of major inequalities still existing within our society. Although many of the disadvantaged meet the technical definition of mental retardation because they function intellectually in a subaverage way, most possess average or above average innate intelligence. Therefore, whereas many disadvantaged children may require special education, the root cause is more environmental than it is a function of ability. Leaders of the disadvantaged community, recognizing this miscarriage of social justice, often aggressively resist the placing of disadvantaged children in special classrooms. Teachers should be sensitive to these circumstances and should be aware of the abilities of disadvantaged students.

Definition of Disadvantaged

Writers and researchers in the past few years have begun to use several different terms virtually synonymously: socially disadvantaged, culturally disadvantaged, culturally deprived, culturally different, etc. The reference group for these descriptions is the white middle-class society. Although different writers may have specified slight distinctions between these terms, to simplify matters we will use the term "disadvantaged" throughout this chapter to refer to those groups which are economically disadvantaged in the quasi-legal sense. Poverty is a common denominator of "disadvantageness," and the disadvantaged are identified for official purposes on the basis of family income.

The definition of the disadvantaged includes three different important points. First, in theory at least, most of the disadvantaged have average or above average intellectual potential. Second, they do not function as well as others in educational situations. Third, an educationally diverse background is responsible for the inadequate educational performance. It is the child's environment and past experiences which prepare him to cope with daily social and educational problems. Some environments and experiences are better than others for preparing children to be successful in white, middle-class oriented public schools. Children who come from environments which do not prepare them to be successful in a white middle class school or in society at large are said to be disadvantaged.

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*This version of the CAI chapter on the disadvantaged was written by Dr. L. L. Leslie.

There are different reasons for the educationally diverse backgrounds which prevent disadvantaged people from reaching their true intellectual potentials. Some people have been affected by changes in technology; their former skills are no longer needed. Such groups include unskilled workers and farm workers who move to cities. Others belong to culturally unique groups which have a rich social and cultural heritage which happens to be somewhat different from the predominately white middle-class society. These groups are usually made up of blacks, Appalachian whites, Puerto Ricans, American Indians, Mexican-Americans, and Southern Europeans. Some of these people may be primarily from preindustrial backgrounds--backgrounds which do not prepare them for the modern industrial urban setting where many of them reside.

Two Important Generalizations About Disadvantaged Children - Plate 11.2

Perhaps the most important generalization to be made regarding disadvantaged youth is their great diversity in all areas. This group is much more heterogeneous than its white, middle-class counterpart. Mexican-Americans differ greatly from blacks, Appalachian whites, American Indians and Puerto Ricans. This can best be illustrated by the diversity found in learning and language styles, family structure and other social, as well as physical characteristics. For example, some Spanish-surnamed students are deficient in English. Blacks may have a rich language that is more than sufficient for daily life in their neighborhoods but is dysfunctional in the school. The same is often true of poor white students.

In addition to the great heterogeneity among ethnic groups having large disadvantaged populations, there is also enormous variety within groups. Mexican-Americans are highly urbanized but many still are rural and agrarian. Many reside in the cities of the southwest, but hundreds of thousands live in the large urban areas of the upper midwest. Some speak excellent Spanish while others speak no Spanish at all. American Indians are equally diverse.

Many have remained on the reservations while many others have moved to large cities. Some tribes value competition while to others the competitive spirit is repugnant. In some tribes the native tongue is still spoken while in others an Indian language has not been heard in decades. Some desire cultural assimilation while others aggressively seek to preserve tribal cultures. Similar statements could be made about the heterogeneity within other disadvantaged ethnic groups.

The important messages of these statements are that 1) diversity is great both among and within disadvantaged groups; but, nevertheless, 2) gross generalizations can be made and are essential to a theory of educating the disadvantaged. Obviously, some generalizations are vital to codifying an instructional approach. In other words the disadvantaged have many similarities when viewed macrocosmically, but they also have innumerable dissimilarities; and the teacher will want to consider the generalizations as theory but the specifics as the ultimate guides to her actions.

A second generalization is that a child may be born with a normal range of intellectual potential, but if he is raised in a poor or educationally inappropriate environment, his performance on middle-class oriented tests and school activities may be similar to that of a mildly retarded child. By definition, however, the disadvantaged differ from the mentally retarded in that most of the disadvantaged have adequate intellectual potential.

Many disadvantaged children score low on intelligence tests although low test scores probably do not truly reflect the potentials of these children. Disadvantaged children may not do well in school on middle-class oriented academic tasks. Disadvantaged children, in spite of their potential, often perform poorly on educational tasks because their particular environment may not prepare them for the specific learning activities that are carried on in the school situation. The environment of disadvantaged children often does not include a sufficient number of learning experiences which prepare them for success in handling school tests. Disadvantaged children can and do learn. The problem is that disadvantaged children often learn things at home which are not high priorities or may be almost totally dysfunctional in middle-class oriented schools. In general, their environment is such that disadvantaged children learn things which are of relatively little use to them in performing academic tasks.

The nature of intelligence tests. Much heat and little light has been generated by research which suggests that black children, on the average, score about 10 points lower than white children on standardized intelligence tests; results are similar for Mexican-American youths, but standardized intelligence tests, such as the Stanford Binet, do not measure the true intellectual potential of disadvantaged children. Consequently, the research studies which show that black children score 10 points lower in intelligence than white children are not very revealing.

No intelligence test really measures intellectual potential. All any test can do is find out, a) what a child has learned, and b) how he can apply what he has learned. If a child has not had the opportunity to learn certain things he will be unable to apply them in a testing or school related situation. Such is the case with disadvantaged children.

Thus, it is not very helpful to say that black children score lower on IQ tests than white children. It is useful, though, to understand that black or other disadvantaged children may not do well in school because they have had different experiences and have not had the opportunity to learn the things other children have learned.

The Impact of Cultural Subgroups

A cultural group is a group of people who share similar beliefs or who share easily identifiable characteristics. Disadvantaged persons often belong to a particular subgroup of the total society. The smaller subgroups are similar to the total or larger cultural groups in some ways, but not in all ways. The children who are raised in a particular subgroup or cultural group are taught the attitudes and social behaviors of that subgroup. From birth onward these children are taught the attitudes and social values and behaviors that vary from subgroup to subgroup. When children enter school, they bring the attitudes and social behaviors that they have learned in their home environment. We often lose sight of the fact that children do not all enter school with the same sets of attitudes, skills, and social behaviors.

We now believe that these differences can and do affect student performances. Consequently, special programs have been initiated to help prepare disadvantaged children for school. Two such preschool programs are Headstart and Sesame Street which attempt to teach skills, attitudes, and social behaviors important to success in school. Progress in school depends upon the child's displaying certain basic skills, favorable attitudes toward school, and acceptable social behaviors. The child who is not taught these things by his subgroup is at a serious disadvantage in most school situations. He is disadvantaged because the school assumes that he has already acquired basic competencies upon which the school may build. Since those children who come from different cultural backgrounds do not have the assumed, basic skills and competencies, attempts to build on top of these missing basic skills result in a very shaky educational foundation. As a result, disadvantaged children start school at a deficit and fall farther and farther behind as each year passes. The greatest failing has been on the part of schools which lack the desire, knowledge, resources, or means to adapt to the styles of the disadvantaged, rather than insist that all adaptation must be by students.

The family. The family and the immediate home environment in which the child grows up probably are the greatest influences on him during his first few years of life. Although the family situation of disadvantaged children differs depending upon the subgroups to which the children belong, often, unreleated people live in the same overcrowded dwellings with the child's blood relations. Overcrowding in the family living unit is often compounded by poor sanitation and inadequate nutrition, which for the child may result in poor growth and low resistance to infection. (The use of medical and dental facilities to alleviate health problems or their subsequent development is often infrequent. In many cases this may be due to the high costs involved.)

The family of the disadvantaged child may not engage in interaction. They may not eat at the same time, or they may not often do such things together as taking trips or playing games. Frequently, the adult males in the household are absent with either the adult female or teen-age children in control of the home. In many disadvantaged groups the family is headed by the mother, in some cases, even when the father is present.

Regardless of who heads the household, the living conditions of the disadvantaged tend to be substandard. The disorganized home often fails to provide proper diet, health standards, or stability. There is often excessive TV watching (probably because TV is inexpensive to watch) and frequent moving. The adults are less inclined to provide guidance.

There is often a high noise level associated with the home of the disadvantaged child--a high noise level that may be partly due to the frequent TV viewing and the large number of persons confined in a small area. Some researchers feel that this high noise level encourages the child to tune out sounds, which may account for the inferior auditory skills exhibited by many disadvantaged children. This auditory developmental lag has important implications for education. In the classroom, much material is presented orally and must be received through the auditory channel. The child who has difficulty receiving auditory information will probably fall behind in the educational process.

There are other characteristics of the home and family that affect the school performance of the disadvantaged child. Often, the range of sensory stimuli is restricted due to the limited variety of objects in the home. Sensory stimuli are particularly critical after 2 years of age. This provides the child with little opportunity to classify and order objects, and to develop skills that are used in school. The home contains few of the tools used in school, such as toys, puzzles, paper, pencils, and crayons. This places the child at a disadvantage when he is forced to compete with students who are familiar with these objects.

Some Learning Characteristics of the Disadvantaged

Because of diverse backgrounds, the learning styles of disadvantaged children tends to be similar to that of educable mentally retarded or slow learning children. Some disadvantaged children tend to do better at learning when stimuli are physical and visual rather than auditory. These children seem to learn better from activities that they can see and do rather than from those that require listening to instructions and other verbalizations. Often, disadvantaged children have learned to tune out words and sounds. Thus, information which is presented through the child's auditory channel is often less well understood than that presented through the visual or physical channel. There is some evidence that the children can control their ability to tune out words and sounds in which they are not interested or do not fully understand.

Language Characteristics of the Disadvantaged

The language characteristics of the disadvantaged tend to set them apart from advantaged children. The following statements summarize some of the more salient characteristics of the language of disadvantaged children.

1. Disadvantaged children tend to run words or phrases together instead of treating the phrases and words as independent though highly related units. The net result is a "giant word" instead of a sentence.

2. Disadvantaged children often omit sounds in the middle of sentences or in the endings of words.

3. Disadvantaged children tend to be poor in labeling objects. They learn the common names of objects later than advantaged children and have difficulty understanding that an object can have more than one name, i.e., concept hierarchies like apple-fruit.

4. Frequent errors in verb usage are often found in the language of disadvantaged children. Subject-verb agreement is often incorrect and the present tense is often used for the past tense.

5. Sentences tend to be short. Longer sentences are formed by running groups of words together and connecting simple sentences with the word 'and'.

6. Disadvantaged children often have trouble with function words and inflections. Words such an 'in' or 'on' may be misinterpreted or missed. The final 's' that makes the plural may be missed in some situations.

Summary of Important Points Related to Disadvantaged Children

1. Disadvantaged children do not form one homogeneous group. They represent several minority groups, especially black, Puerto Rican, Mexican-American, American Indian, and Appalachian White; moreover, they are not homogeneous within groups.

2. Most disadvantaged children probably have at least average intellectual potential but have not had the opportunities to learn how to function adequately in school situations. They have limited functional (in the school sense) experiences and are not prepared to compete with advantaged children in a white middle-class oriented school.

3. Disadvantaged children come from low income families.

4. When compared with advantaged children, disadvantaged children use a restricted, limited, language, and find it hard to communicate with others outside their particular cultural subgroup. On the other hand, language within a particular subgroup may show a rich cultural heritage.

5. Disadvantaged children have more health and physical problems than advantaged children.

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CHAPTER 12

EMOTIONAL DISTURBANCE*

There are certain children in some classrooms who are problem children. These children deviate, or are so different, from the average child that they have difficulty deriving benefits from regular school programs. These children require special attention or provisions which are designed to help them achieve their potentials educationally, socially, and affectively. Emotionally handicapped children may display a large range of observable behaviors. These children are often disturbing to other children and to their teachers. Sometimes they behave inconsistently; in other words, they sometimes act normally and at other times their behavior is very different. They may be overactive or they may be underactive. They may or may not be students who achieve as we expect them to. They may or may not get along well with others. They very often, although not always, behave inappropriately in given situations. The foregoing statements suggest that the emotionally disturbed child can be described in many different ways and that the emotionally disturbed child may exhibit many types of behavior.

The terms emotional disturbance, emotional handicap, and social maladjustment are broad terms that include many of the same basic concepts. The terms can be misleading but they are used to refer to children who have problems that may make it difficult for them to derive the maximum benefits from their school experiences.

Identification of Disturbed Children

Children who have problems are identified by observing their behavior. The behaviors of these children are often different from those of normal children. A disturbed child displays responses, or behaviors, that are inappropriate in certain situations but not necessarily in other situations. The key is the word inappropriate. All the observed behaviors of disturbed children are not so bizarre or different that they would be inappropriate in all situations. The relationship between the particular behavior that is observed and the situation in which it occurrs is important to consider.

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*The CAI version of this chapter was written by Miss Mary Ann Villwock, Mr. Richard Starr, and Professor Carol A. Cartwright.

Inappropriate behavior is behavior that is not suitable for a given situation.

A child with special problems exhibits inappropriate behaviors frequently. Occasionally normal children may display inappropriate behaviors. If a child consistently or frequently displays behaviors that are inappropriate for the situation, then the child should be referred to the school psychologist or other resource person for further study.

Emotionally disturbed children are likely to display not just one, but many different inappropriate behaviors and to display these behaviors very frequently. The behaviors that are displayed may or may not be consistently displayed in similar situations. In fact, one of the most frustrating problems that teachers and others encounter in working with emotionally disturbed children is the inconsistency of the behavior of the children. At times the children may appear normal in some situations and in some activities. Other times those very same situations may be too difficult for the child to handle and his behavior once again is inappropriate. Some emotionally disturbed children may appear normal in many areas of behavior but abnormal in others.

The words may and possibly and other qualifying terms have been used extensively in this chapter. The use of the terms is not so much to "hedge" but to reinforce the notion that emotionally disturbed children cannot be grouped into one homogeneous group. No one particular pattern of behavior will describe all disturbed children. Sometimes, however, the various inappropriate behaviors displayed by a child seem to have an underlying similarity. Specialists who work with emotionally disturbed children can often identify these behaviors that fall into logical groups. These groups of behaviors are called symptom clusters. An example of a symptom cluster is shown in Plate 12.1. The behaviors clustered in Plate 12.1 are only a few of many other behaviors that a child might exhibit. Any one of these behaviors taken by itself would not necessarily indicate any particular problems for a child, especially if the behavior had a very low frequency of occurrence. Frequent display of all or most of these behaviors would suggest that a child needs examination and study by specialists.

Frequent inappropriate behaviors displayed by children with problems interfere with the children's ability to function effectively. The reduction in effectiveness may be evident in only a small part of their behavior or it may occur for much of their behavior. A child's inappropriate behavior may hinder

Behavioral signs can be grouped into a symptom cluster

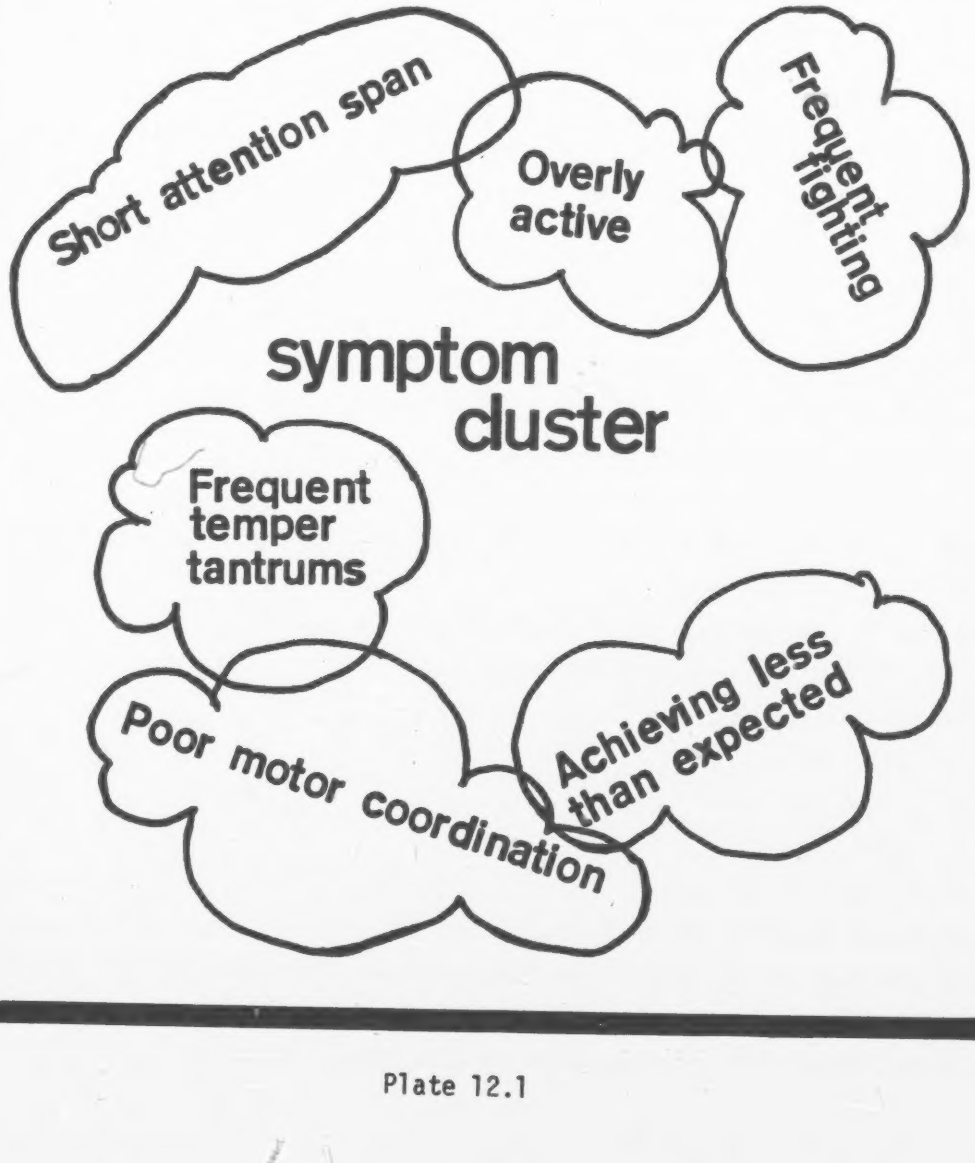
Short attention span
Overly active
Frequent fighting
symptom cluster
Frequent temper tantrums
Poor motor coordination
Achieving less than expected

Plate 12.1

him in reaching a desired goal or it may even prevent him from reaching the goal at all. Even though a disturbed child may eventually reach a goal he usually will not do so as quickly and efficiently as a normal child.

The definitions of four areas of disturbed behavior are shown in Plate 12.2. The emotionally disturbed child may be ineffectual in reaching goals or performing tasks in any one or all four of these areas of disturbed behavior. Skills in the cognitive, affective, social, and psychomotor areas are important for success in school. Reduced effectiveness in any one of these areas can minimize a child's successes in school situations.

The six major points that characterize emotionally disturbed children are summarized on Plate 12.3. In summary, disturbed children display inappropriate behaviors and display these behaviors quite frequently. They may display many different kinds of inappropriate behaviors and the behaviors often can be grouped into a symptom cluster. Inappropriate behavior usually reduces a child's effectiveness in one or more areas of behavior that are important for success in school: cognitive, affective, social, or psychomotor. Disturbed children may appear normal in many situations; normal children may behave inappropriately on occasion.

Bizarre or unusual behaviors. One behavioral characteristic sometimes exhibited by children with special problems is a preoccupation with the unusual. Such behavior, depending on the specific activities and preoccupations of a child, as well as the frequency with which it occurs, may seem bizarre. Some disturbed children display self-mutilating behavior. Self-mutilating behavior is behavior in which the person inflicts injury or pain to his own body.

Other related behaviors which do not cause actual injury to one's body, yet which reflect tension and are associated with the body are:

1. facial twitching;
2. nail biting;
3. thumb sucking;
4. fist clenching;
5. body shaking.

Although bizarre and self-mutilating behavior is often associated with special problems in children, the frequency and intensity of such behavior must still be taken into account. High frequency or intensity is more likely to be associated with the behaviors of disturbed children.

Areas of Disturbed Behavior	Definition
Cognitive	Thinking and related behavior as in reading.
Affective	Emotional such as control of anger or mood, depression or sadness.
Social	Interpersonal relations – how one gets along with others.
Psycho–motor	Coordination skills, degree of awkwardness, or physical skills.

Plate 12.2

Children with problems:

1. Display inappropriate behaviors.
2. Display inappropriate behaviors frequently.
3. Display many different inappropriate behaviors.
4. Display appropriate behaviors in some situations.
5. May display behaviors that have a logical similarity or form a symptom cluster.
6. Display behaviors that reduce their effectiveness in the cognitive, affective, social or motor areas.

Plate 12.3

Another inappropriate behavior is the inability to continue with a task for a reasonable length of time. Children who jump from one activity to another or who continue with any one task for only a very brief period have a short attention span. Since all children experience excitement, irritability, or depression which occasionally interferes with their ability to concentrate, we must again be certain that such behavior is indeed characteristic of a child before assuming that special problems exist.

For example, young children are typically not able to concentrate on a task as long as older children. This fact is taken into account in the curriculum designed for earlier grades. Younger children have shorter attention spans than do older children. Length of attention span is a developmental characteristic and does not indicate that all young children have special problems.

What is considered normal behavior for children constantly changes as they grow older. Behavior that would be considered quite appropriate at one age is considered to be immature several years later. The important thing to keep in mind is that observed behavior of children must be compared with that of their peers when attempting to make inferences about the presence of special problems.

Two common and related complaints of disturbed children are excessive complaining about their health and excessive complaining that they are blamed for everything. When a child consistently complains about his health, every effort should be made to see if his complaints are valid. No child functions effectively if he does not feel well or if he cannot see or hear as well as he should. It is also important to consider how often and in what situations his complaints occur and if or when they interfere with his school work. We would be suspicious of a child who complains that his head hurts when he does arithmetic but who does not mention the problem at any other time.

Complaints by a child that other children or the teacher are always picking on him or that he is always blamed for everything that happens should be observed and recorded. Some disturbed children feel that people are secretly ganging up on them and are scheming to hurt them or prevent them from attaining some goal.

Another behavioral characteristic that may indicate that children have emotional problems is their reaction to fear. All children have fears and they react to the fears in a variety of ways. We know that the most common reactions to fear are crying, trembling, and running away or avoiding the fearful situation. Fear reactions of disturbed children sometimes differ from those of normal children. Generally speaking, this difference is similar to those of the other symptoms we have discussed: the differences are related to the frequency, intensity, and appropriateness of the behavior.

Children with emotional problems may have irrational fears; i.e., they may fear inappropriate objects or situations. They may also react to a fearful situation with inappropriate behavior or with behavior which is excessively intense.

Summary. In summary the less common behaviors that are sometimes characteristic of disturbed children are, a) a preoccupation with the unusual or bizarre, b) self-mutilating behavior, c) short attention span, d) excessive complaining about one's health, e) feeling that all criticism is a personal attack, and f) inappropriate and excessive reactions to fear.

Speech and Language Problems

Speech and language disorders are one possible sign of emotional problems. A child may display inappropriate speech and language behavior without having emotional problems, and likewise, an emotionally disturbed child does not necessarily have or exhibit speech and language dysfunction. Some speech disorders have a physical or a learning basis. These should not be considered to be symptoms of emotional problems. The speech and language behaviors that will be presented in the next few paragraphs are among those that may be indicative of emotional problems.

Delayed speech. The lack of speech or very immature speech in school age children is sometimes called delayed speech. Delayed speech in children may be related to emotional problems. Further observation by speech specialists is needed to determine if the problem has an emotional basis.

Stuttering. Stuttering or stammering speech behavior is often related to emotional problems.

Excessive verbalization. Excessive speech in the form of chatter that is difficult to understand is often related to emotional problems.

Garbled speech. Words that are so mixed up that sentences are unintelligible are called garbled speech. Each of the individual words may be understandable, but the combination of the words does not make an intelligible sentence. This type of speech, if it occurs frequently, may suggest the existence of an emotional problem.

Echoing and rhyming. Some children with emotional problems will not initiate speech of their own but will repeat the last several words of sentences spoken by the teacher or classmates. This is often done in situations when questions are directed to the child. Some children speak with particular rhythm or rhymes. The rhymes may or may not be made up of words that are appropriate to the particular situation.

Volume of speech. Excessive loudness or softness of a child's voice is sometimes associated with emotional problems.

Inability to maintain a conversation. Some disturbed children cannot or will not logically continue with the topic of conversation. Other children may not communicate unless they can talk about one particular topic. If asked to respond to a different topic, the child may not respond at all or may respond inappropriately by talking about his own preferred topic anyway. Children who display this behavior often interject comments or questions which are unrelated to the current topic.

Virtually all children display one or more of the behaviors listed above at one time or another. If the behaviors are exhibited very frequently, then the child should be referred for further examination.

Characteristics of a Good Observational Record

1. Children should be observed in a variety of situations, and records of each observation should be kept.
2. Observations should be made frequently.
3. Records should be as objective as possible. Only the exact behavior of the child should be recorded. Interpretation of the behavior should be labeled as interpretation.

Summary

Labeling a child as emotionally disturbed has few practical purposes. Simply stating that a child is emotionally disturbed tells us nothing about the behavior that the child displays. Without this information, it is impossible to prescribe a treatment which might alleviate the problem. If a child in a classroom has some peculiar behaviors, the child should be discussed in terms of the behaviors that he exhibits. It is easier to relay accurate information about a child to others if an objective record of observations has been kept.

Since children with problems may display normal behavior in some situations and since normal children behave inappropriately at times, an adequate observational record should include many observations of a child in many different situations. An ordinary school day offers many opportunities for observation. The teacher can observe pupils in group activities such as organized games, class discussion, work projects; and in solitary situations, such as rest, written assignments or free activities.

An imaginative teacher can devise informal means for observing pupils and learning such things as how they feel about themselves and their surroundings. For instance, for pupils to express themselves, creative writing, painting, drawing, telling stories, or creative dramatics can be provided. Records can be kept about children's performances and/or products during these activities.

There are many other kinds of evaluation procedures that have been discussed. These procedures are reviewed in other sections of this handbook.

If a child often behaves inappropriately and seems to have special problems and frequent and objective observations support the presumption that the child has special problems, then the child should be referred to a specialist for further evaluation. School systems differ both in number of facilities and special personnel available for referral and in the method of making a referral. In many schools, referral for evaluation of a child with problems will be made to the school psychologist.

If a child has been identified as having special problems and referred to the appropriate specialist, there will be a period of time while the specific diagnosis is being obtained. During that period of time, the child usually stays in his regular classroom. Knowledge about individual differences and about emotional disturbance should give the regular classroom teacher a start toward dealing with the child while specific diagnosis is being made. A later chapter in this book deals with specific techniques which are especially helpful to use in working with children who have emotional problems.

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CHAPTER 13

FIRST GRADE SCREENING TEST (FGST)* **

The First Grade Screening Test was designed specifically as a screening instrument. Results of the FGST are used to identify those children who will probably have difficulty learning at the first grade level. The children who are screened out by the FGST are those who probably would not, without special help, make sufficient progress in the first grade to be ready for second grade the following year. The FGST serves to prevent the children who are likely to be unsuccessful in the first grade from suffering the experience of failure.

The FGST is a group test. It is designed to be administered to children at the end of their kindergarten program or at the very beginning of their first grade year. The test authors note than at early administration of the test allows more time for educational planning.

The FGST is concerned with three major kinds of handicaps that could potentially cause school failure: intellectual retardation, central nervous system dysfunction, and emotional disturbance. These handicaps are often manifested together or in combination with one another. The FGST yields a single, composite score. When a child receives a low score on the test, more specialized evaluation is needed to determine the child's specific strengths and weaknesses.

Decisions about educational placement using the results of the FGST are made on the basis of cutting scores. A cutting score divides the distribution of scores into two groups. Children whose scores fall at or below the cutting score should be referred for more specialized evaluation. If a high cutting score is used, more children will be screened out than if a lower score is used. Each school system that uses the FGST should determine the cutting score most appropriate for its own needs. This decision will be influenced by the academic standards of the community and the availability of facilities and personnel.

Refer to the specimen set for more detailed information about the FGST.

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*PATE, J. E. & WEBB, W. W. First Grade Screening Test - Manual. Circle Pines, Minnesota: American Guidance Service, Inc., 1969.

**The CAI version of this chapter was written by Miss Mary Ann Villwock.

CHAPTER 14

VISUAL PROBLEMS*

This chapter contains information about the various kinds of visual problems that children may have and about procedures that can be used to identify children's visual problems.

Children who are blind or who have severe visual problems are almost always identified as being blind by the time they are two or three years old. Mild visual problems, however, may not show up until the child is in a public school or preschool program.

You will recall from your study of the Educational Information Processing Model that one of the more important input channels for a child is vision. The visual channel is used quite extensively by children to receive educational information. Children with visual problems are sometimes called partially seeing, partially sighted, or visually impaired. These are children with some vision who may be able to read limited amounts of regular print. Often, though, they can read only oversized or large print books. Special educational provisions are often required so that the child can reach his academic potential.

Professional Persons Who Work With Children Who Have Visual Problems

Some colleges and universities prepare teachers to work especially with blind or visually impaired children. These teachers have had special training and practical experiences which enable them to provide good educational opportunities for visually impaired children.

Special training is also required for a group of professionals called peripatologists who work primarily with totally blind individuals. Peripatologists assist blind people in mobility training, or the ability to move about with the aid of seeing eye dogs or canes.

An ophthalmologist is a medical doctor who specializes in diseases and defects of the eye. He is licensed to prescribe medicine and to perform surgery on the eye. An optometrist, on the other hand, is usually not a medical doctor. An optometrist is trained to make examinations of the eye and to prescribe corrective lenses. An optician is a lens grinder.

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*The CAI version of this chapter was written by Miss Karen Braddock, Professor G. Phillip Cartwright, and Mrs. Mary Sabatino. Professor Ralph Peabody was consultant.

Parts of the Eye

The *cornea* is the transparent part of the eyeball that covers the *iris* or the colored part; the cornea also plays a role in focusing. The *pupil* appears to be the small dark center of the eye. The *lens* is a transparent structure that is located directly behind the pupil. The lens focuses the light rays on the *retina* or light-sensitive lining of the eye. The *ciliary muscules* control the amount of light that reaches the retina and plays an important role in the focusing of the eye on near and distant objects. The main parts of the eye are diagramed on Plate 14.1.

Some Common Visual Problems

Problems of visual acuity. Normally the lens of the eye focuses the image on the retina. In *myopia*, the image falls in front of the retina because the eyeball is long or because the cornea and/or lens do not focus the image normally. In *hyperopia*, the image falls behind the retina because the eyeball is short or because the lens and/or cornea do not focus the image normally.

In general, a child with myopia has more difficulty seeing distant objects than he has seeing near objects. The reverse is true for a child with hyperopia although a child with a significant degree of hyperopia may have a problem with both near and far vision.

In *astigmatism*, the cornea or the lens of the eye is irregularly curved. The irregular curvature causes parts of the image to fall behind the retina and parts to fall in front of the retina, resulting in distorted or blurry vision.

Plate 14.2 illustrates focusing problems associated with myopia and hyperopia.

Problems of eye or muscle coordination. One or both eyes of a child with *strabismus* turn or deviate from the normal position because of a weakness of eye muscles or a lack of eye muscle coordination. A person with this condition is commonly said to be cross-eyed or wall-eyed. Doctors cometimes call these conditions "squint."

In an eye with a *cataract*, the crystalline lens has become opaque or cloudy. In addition to poor visual acuity, the field of vision is severely restricted. An ophthalmologist may perform surgery to remove certain types of children's cataracts. However, not all cases of cataracts in children can be removed by operations. Even if surgery is successful, glasses or contact lenses are usually required.

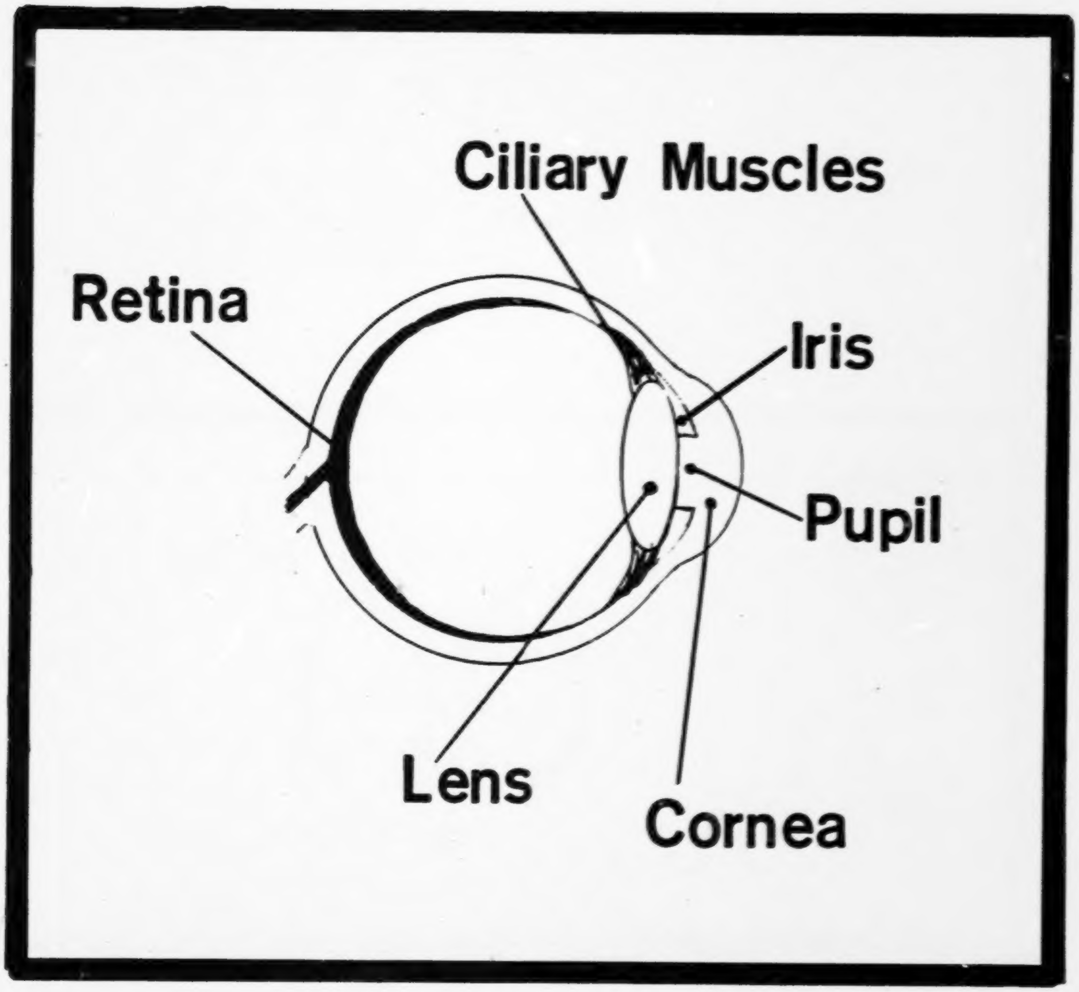
Ciliary Muscles
Retina
Iris
Pupil
Lens
Cornea

Plate 14.1

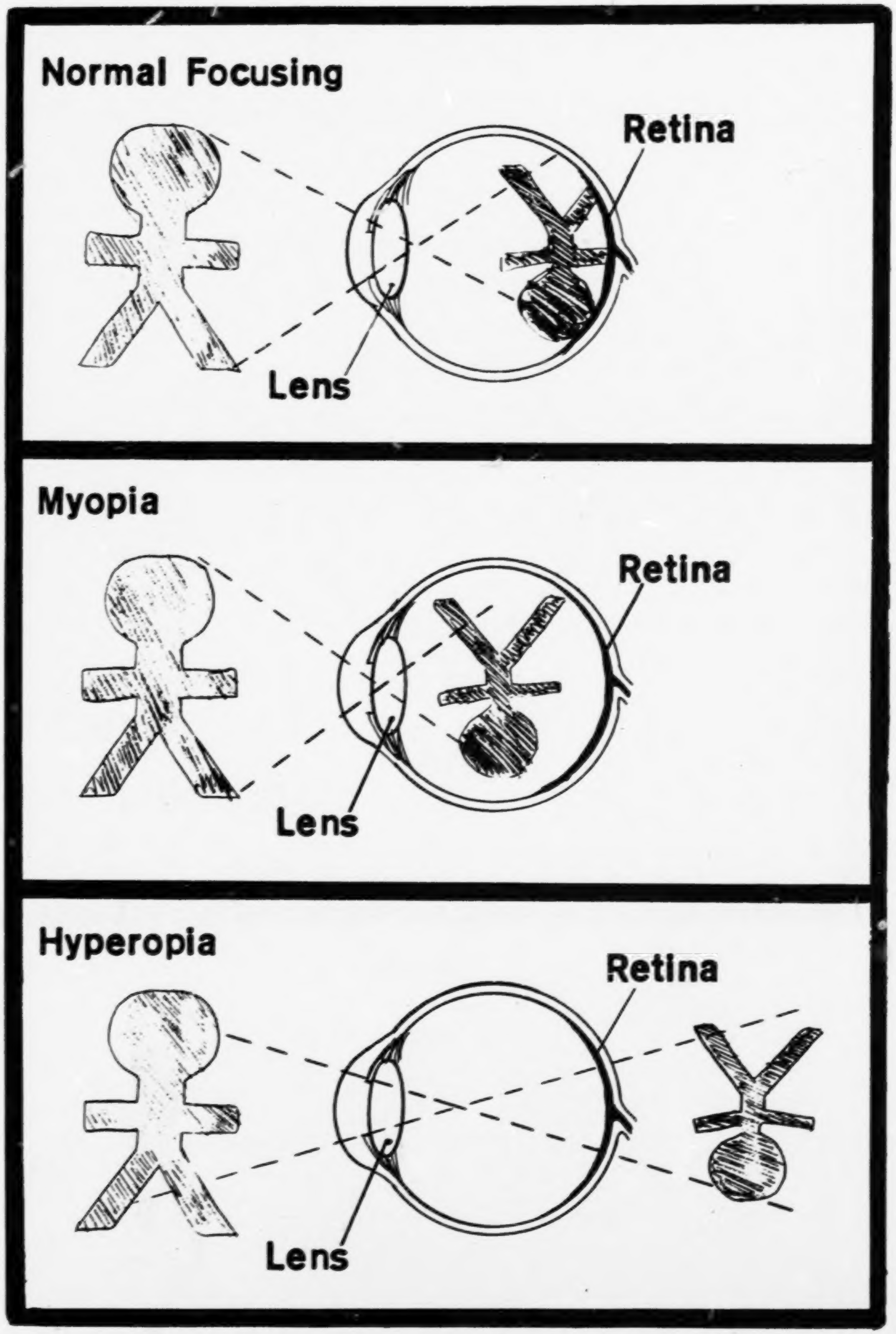
Normal Focusing
Retina
Lens
Myopia
Retina
Lens
Hyperopia
Retina
Lens

Plate 14 .2

The eyes of a child with nystagmus will oscillate or have rapid, jerky, involuntary movements. Nystagmus may increase during periods of stress. Also, nystagmus may cause an apparent color discrimination problem. Two adjacent colors such as red and blue may blend into a third color (purple) when viewed by a child with severe nystagmus.

An obvious requirement for school-related activities is the ability to focus the eyes together to see a single image. A child who has had a visual impairment since birth may not realize that he has a problem. "Double vision" may seem natural. Consequently, when questioning or examining children suspected of any handicap, keep in mind that the child may be unaware that his abilities are subaverage.

When a person shifts his gaze from an object nearby to one further away, his eyes automatically and rapidly focus on the desired object. This process is called accommodation. The ciliary muscles flatten the lens to accommodate distant vision, and permit bulging of the lens to permit near point focusing. Normal accommodation permits rapid focusing on near and far objects.

Abnormal accommodation does not permit instantaneous clarity of vision when looking at objects at different distances. A child should have the ability to shift his focus from one object to another. A simple test for accommodation can be made by directing a child to focus alternately on different objects and to name each object in turn. The far objects should be shifted frequently to insure that the child rapidly recognizes the different objects.

Two additional problems that are quite common among young children are amblyopia ex anopsia and photophobia. Amblyopia ex anopsia is known as "lazy eye" or "wandering eye," and is characterized by the inability to keep both eyes coordinated. Photophobia is extreme sensitivity to light.

Some Characteristics of Children With Visual Problems

With most handicapping conditions, it is often difficult to say for certain whether or not a given characteristic is a cause or an effect of the handicap. Also, some symptoms or characteristics may be representative of more than one handicap. It is risky to conclude that a child has a particular disability just because he has one or two symptoms which are characteristic or often associated with that handicap or disability. Thus, if a child displays only one of the physical symptoms shown in Plate 14.3, it would be unwise to conclude that the child has a visual problem, especially if the child has not displayed that symptom over a long period of time.

Posture can be an important clue to the identification of children with moderate or severe visual problems. Some children with vision problems seem to keep their bodies somewhat tense. They do not seem to be relaxed.

Perhaps a more general trait that is often associated with partially seeing children is apparent poor motor coordination. Children with vision problems often have poor general body control and seem awkward and uncoordinated. These children may seem to move more cautiously than others on stairs, rough ground, or unfamiliar areas. The reason is obvious: they simply can't see where they are going.

Other common habits of children who have vision problems are tilting the head to one side, thrusting the head forward, or moving the head excessively while reading or doing other close work.

Even when a child is seeing well, physical signs may indicate that the child may have an eye disease or condition that could lead to reduction or loss of vision. The appearance of a child's eye may give a clue to the fact that he has a vision problem, an eye disease, or irritation that could lead to the loss or reduction of his vision.

Social and emotional problems. Social and emotional problems may occur with any child who has a disability. A child's reaction and adjustment to an impairment often causes more problems than the impairment itself. Problems in emotional adjustment often accompany severe impairment, and psychological and emotional problems often turn a mild impairment into a severe handicap. The social and emotional problems which are described in this section are not limited to children who are visually impaired. The same emotional problems may be found in children who have other impairments or disabilities. For example, hard-of-hearing children are just as often tense and withdrawn as partially sighted children. Many of the emotional problems described in this section are common to virtually all handicapping conditions. Consequently, if the child displays one or two of the behaviors mentioned in this chapter, it cannot be said for certain that he has a vision problem. He may have some other physical or mental disability or he may just have a temporary situational behavior problem.

Physical Symptoms of Visual Problems

- headaches
- dizziness
- blurred or double vision
- pain in the eyes
- burning or itching lids
- sensitive to light
- unable to distinguish colors
- tires easily
- red rimmed, encrusted, scaley or swollen eyelids
- repeated sties
- watery or red eyes
- crossed eyes
- discharge of pus from eyes
- cloudy eyes
- drooping lids
- oscillating eyes
- dilated pupils

Plate 14.3

Two important points to remember are:

1. Emotional problems are not a necessary consequence to poor vision or to any other handicap.
2. Emotional problems which do occur are not necessarily directly proportional to the severity of the handicap.

The following symptoms seem to be most prevalent during, or immediately preceding an activity that requires good vision. These behaviors are not as pronounced or frequent after such activities. Notice that activities requiring good vision are not necessarily those that require good near vision. In fact, more partially sighted children are handicapped in activities that require good distant vision than in those requiring good near vision. Symptoms associated with tasks requiring good vision are:

1. crying, whimpering;
2. real or imagined illness;
3. tenseness, irritability;
4. inability or unwillingness to participate in activities or games requiring good vision.

The problems mentioned above may occur more often when good distant vision is required; i.e., map work, reading the chalk board, etc. Also, activities such as playing ball may be avoided. In fact, some partially seeing children prefer reading or drawing to all other activities. In many cases, though, their world ends just three feet from their eyes.

Other more general problems which are not directly related to vision are:

1. aggression and temper tantrums;
2. withdrawal;
3. discouragement and resentfulness;
4. day dreaming and poor concentration;
5. not liked by others nor by self.

Learning and other school related traits. Partially sighted children are, on the average, more like normally sighted children than unlike them. In general, emotional development and physical development are quite similar to the development of normal children.

Intellectual development is also more like that of normal children than different from it. Thus, it follows that learning ability and academic performance should be similar to that of normal children. This is not to say that partially sighted children will not have problems in school. On the contrary, unless these children are identified early in their school careers and are given special provisions, they will most certainly fall behind normal children in school.

The distribution of intelligence of children with visual problems is virtually the same as that of normal children: with a large number of children we would expect an IQ of 100 with a standard deviation of 15 or 16, give or take a few points.

Unfortunately, however, partially seeing children usually lag behind their normal peers in academic work. Much of what goes on in a classroom is visual, and the child who cannot see too well is bound to fall behind.

Academic retardation of visually impaired children may be due to the following:

1. It simply takes longer for a visually impaired child to do things than a normal child.
2. The visually impaired child has a different and more limited conception of real life situations than normal children. A normal child may see the whole tree; a partially sighted child, only the trunk.

School Problems of Partially Seeing Children:

1. behind the rest of the class in reading;
2. loses place while reading;
3. skips or rereads;
4. vocalizes when reading silently;
5. reverses or confuses letters or words;
6. tilts or moves head, covers one eye;
7. uses finger as marker.

Note that any one or two of the above symptoms taken alone should not lead to the conclusion that a child is visually impaired. The above symptoms may be indicative of other problems. Frequent instances of any of the above behaviors, however, coupled with other instances of inappropriate behavior, might be sufficient evidence to refer a child to a school psychologist for a complete educational evaluation.

Additional Remarks About Visually Impaired Children

1. Partially seeing children have different levels of visual functioning depending on the situation. That is, differences in lighting, distance to viewed object, fatigue of the child, distractions, etc., may have a more debilitating effect on these children than on normal children. A partially seeing child may be literally blind in a new situation. A change in lighting, motion of viewed object, change in distance of object, distractions, etc., all may contribute to the deterioration of the visual integrity of the partially seeing child. He may appear fairly capable in one situation but not in another.

2. There are more partially sighted children who can read books than there are those who can read the blackboard or wall chart from a distance.

3. Many partially sighted children like to read and do extremely detailed drawings. They prefer these activities to playing ball or other distance vision activities. The environment of the partially seeing child is more like that of the normal child at a distance of three feet than at a distance of twenty feet.

4. It is more critical for a child with a vision problem to have adequate lighting for visual tasks than for other children. Lighting should be steady and dependable. Also, the work area should be a glare free surface.

5. Safety lenses are essential for children who must wear glasses.

6. Be certain that the child knows and understands what he _can_ and _cannot_ see. Don't just ask him if he can see something. Ask him to identify and describe the object. The visually impaired child may not realize that his vision is impaired. He may unconsciously assume that everyone sees as he does.

7. Remember that a child may confuse similar letters or signs. For example, a child might mistake a multiplication sign for an addition sign and perform a series of additions instead of multiplications. Teachers should check continually for comprehension and be alert for misunderstanding on the part of the child.

8. Most preschool children are far-sighted. This is a normal part of growing up and nothing to get unduly alarmed about. Far-sightedness should disappear around age six or seven.

Vision Screening

The purpose of vision screening is to sort out those children who may have eye or vision abnormalities. Children who are suspected of having abnormalities are referred for professional eye examinations. Vision screening is for gross identification only. Precise diagnosis of specific vision problems can be performed only by trained specialists. Vision screening tests may be given by teachers, school nurses, or doctors, or trained volunteers. The tester must thoroughly understand and be adequately prepared to give the test.

Vision screening tests can be sorted into two categories. One category consists of those tests which require specialized equipment or charts not normally found in regular classrooms. The other category contains tests that can be given without special materials.

In general, tests for visual acuity require special materials. On the other hand, tests of muscular control and balance do not require special materials. There are exceptions of course, and eye specialists use other techniques not listed here. Also, specialized test equipment can be used for many different types of diagnostic eye testing.

Test requiring special materials. Snellen Test - The Snellen Test is probably the most well known screening test of visual acuity. In this test, the child is asked to identify letters or other forms from a distance of twenty feet. The Snellen Test can be used to test for hyperopia (i.e., farsightedness). The child is asked to view the Snellen Chart through a pair of +2.50 diopter lenses (+1.75 diopter lenses are used for grade 3 and above). If the child cannot identify four of the six symbols on the twenty-foot line, his visual acuity is good, and he passes the test. If the child can see the twenty-foot line (identify four of the six symbols), then he fails and should be referred for more extensive testing since he is probably hyperopic.

Other Equipment - Commercially built machines like the Keystone Telebinocular, Sight-Screener, and Ortho-Rater are binocular, stereoscopic testing devices that screen for vertical and horizontal muscular imbalance and coordination, fusion, depth perception, and near and far point visual acuity.

Prism Test of Binocular Awareness - This test is designed to test how well the eyes work together to form a single image.

The Pseudo-Isochromatic Plate Test - This test is sometimes called the Ishihara color plate test. It is a test for color blindness. The child is asked to look at fourteen Pseudo-Isochromatic plates and to read the number he sees. Seeing the numbers depends on the child's ability to distinguish colors.

Tests that do not require special materials. These tests can be given by regular classroom teachers without special training or equipment. In general, the procedures are designed to reveal problems in eye motility, peripheral orientation, eye alignment, fixation, and convergence.

In the test for eye motility, the child follows a pen light with his eyes as it is held ten to twelve inches from his nose and is moved up and down, and from side to side.

A pen light is also used within the test for eye convergence. The child is directed to watch the light as it is brought in from a position twelve inches from the child's nose to within four inches of his nose. The child's eyes should be able to focus on the light from twelve inches down to four inches. Eye movements to keep the object in focus should be smooth.

In the test for eye alignment, the pen light is held ten inches from the nose and one eye is covered for a count of three. The eye is then uncovered and observed. Eye alignment is considered normal if the eye stays in alignment.

In the test for peripheral orientation, the child is required to, 1) walk through a track formed by two pieces of masking tape, and 2) stop even with a chair two to three feet to the side while looking at a target.

Other informal testing procedures include observation of eye movements when the child looks at a sequence of pictures; observation of a child's ability to read different size print; and observation of a child's ability to catch objects thrown to him.

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Visual Problems

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CHAPTER 15

HEARING PROBLEMS*

It was pointed out in the last chapter that vision is an important input channel. The second major means by which a child receives educational information is the hearing channel. The input channel of hearing is extremely important in language learning. Hearing problems may distort or significantly reduce auditory information that a child needs to receive in order to perform adequately in school.

This chapter will be devoted to problems of hearing loss: degree and kind of impairment, causes, and treatment. Primary emphasis of this chapter, however, will be on the educational significance of the problem.

Definitions

Deafness. Deafness is severe or complete loss of hearing sensitivity. Educationally, a deaf child is one whose hearing is too poor to permit the normal learning of speech. A child or adult who has suffered a severe loss of hearing after learning speech is called deafened.

Hearing impairment. Hearing impairment is the most general term for any kind of malfunction of the auditory mechanism. It implies a severity great enough to interfere with the activities of everyday living. The person may be considered hard-of-hearing or deaf, depending on the severity of the loss. Hearing handicap is the effect of a hearing impairment.

Dimensions of Hearing Ability

There are several dimensions of hearing ability which may be impaired.

Sensitivity. Sensitivity is the ability to hear soft or low intensity sounds.

Discrimination. Discrimination is the ability to hear words.

Frequency range. Frequency range is the extent of low to high sounds, as on a musical scale, that can be heard.

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*The CAI version of this chapter was written by Professor Asa Berlin.

Other dimensions of hearing can be tested but sensitivity, discrimination, and frequency range are the most basic and most often tested when a hearing problem is suspected in a school child.

Threshold of Hearing

A person's threshold of hearing is that point at which he can hear a soft sound half the time. Threshold of hearing is often referred to as hearing level. Hearing level or threshold is usually stated in decibels which is a relative measure of power. On hearing tests, zero decibels is the average point for each frequency at which people with normal ears begin to detect sounds. A person with a level of -10 decibels would be able to detect a fainter sound than a person with a level of +10 decibels. Normal hearing level varies from about -10 to about +15 decibels.

Pure Tone Audiometer

The schools usually have access to a hearing testing device which tests both frequency and sensitivity. This device is called a Pure Tone Audiometer. There are many different types of audiometers, but the Pure Tone Audiometer typically covers a frequency range from 125 cycles per second (or hertz) to 8000 hertz. This wide range of frequency covers the most important frequencies for hearing and understanding of speech which lie between 500 and 2000 hertz.

Audiometers have earphones for delivering sounds to the persons being tested. The person giving the test will set the various controls for pure tones at pitches ranging from very low to very high. The child being tested indicates he can hear the tone being played. Testing a wide variety of frequencies is required because a person's threshold for hearing may change at different frequencies. In other words, it may take a much greater intensity, or loudness, to reach threshold of hearing at some frequencies than at others.

Results of a pure tone audiometric examination are usually recorded on an audiogram. An audiogram is reproduced in Plate 15.4. Notice that the audiogram is a grid. One axis is frequency and the other axis is intensity. The intensity is measured in decibels and indicates how much louder than normal the sound must be to reach threshold.

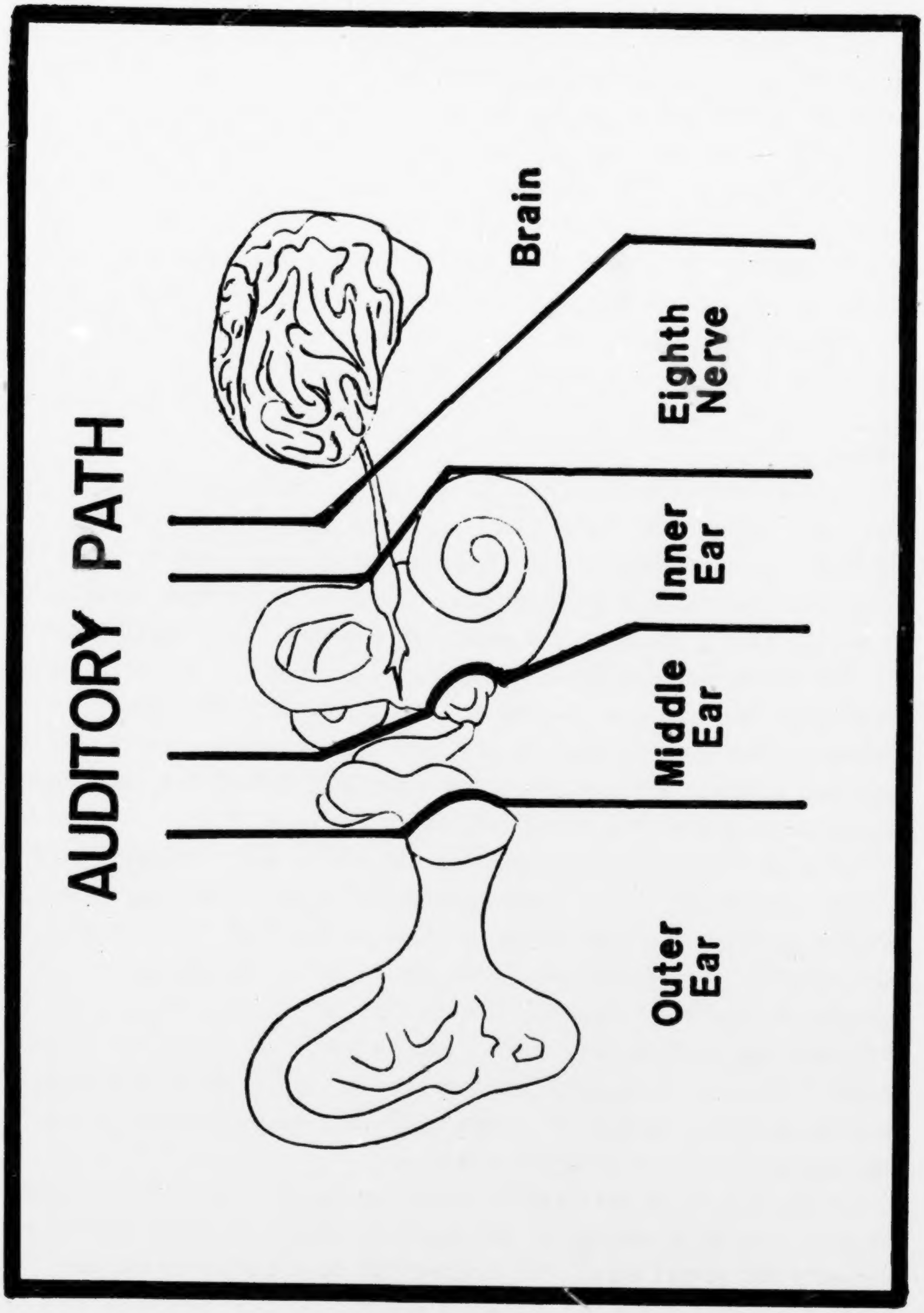
AUDITORY PATH
Outer Ear
Middle Ear
Inner Ear
Eighth Nerve
Brain

Plate 15.1

The Ear - And Hearing

Sound - which is vibrations of the molecules in air, or other medium, is conducted through the outer ear to the middle ear into the inner ear, where it is changed by the end organ of hearing into nerve impulses. The nerve impulses travel up the eighth cranial nerve, are transmitted through several brain levels, and are perceived at the cortex (see Plate 15.1). Hearing may be impaired because of trouble at any point in the chain described above. Also, psychological problems may result in a loss of functional communication.

Hearing losses can be classified by location, as shown in Plate 15.2. Conductive losses mean problems getting the sound to the inner ear. A sensorineural loss may be in the Cochlea of the inner ear, or in the nerve to the brain. Central losses are in the brain.

Conductive losses are never total. Even if there is no opening into the ear, sound can be made loud enough to set the bones of the head into vibration, and therefore the vibrations can reach the end organ in the inner ear. Most conductive losses are not this severe. Causes of conductive losses include wax in the ear canal, damage to the drum, and problems in the middle ear.

The middle ear has three little bones, or ossicles, which facilitate the transmision of sound from the ear drum to the fluid of the inner ear. The middle ear cavity is filled with air, and the air pressure in the middle ear is equalized with the air pressure outside the body through the Eustachian Tube. The various parts of the ear are diagramed in Plate 15.3.

Many conductive problems arise in the middle ear. The middle ear may develop growths, or it may become infected with germs entering through the Eustachian Tube. A common malady is a broken ear drum. The ear drum may be restricted by low air pressure in the middle ear if the Eustachian Tube does not open to equalize pressure. The ossicles may stiffen, or the foot plate of the inner-most ossicle (the stirrup) may become fixed in the oval window leading to the inner ear. Conductive problems may be transitory or persistent, i.e., acute or chronic. Fortunately, most of these conductive problems can be improved by medical or surgical treatment.

Plate 15.4 is an essentially normal audiogram. Only one ear is indicated. The zero line is an average of the intensity needed to reach threshold at each frequency for normal ears. The fluctuation above and below the zero line is within the normal range and you would expect some such variation in a test of normal children.

Classification of Hearing Losses

PERIPHERAL LOSSES

Conductive Losses

Usually problems in outer and/or middle ear.

Sensori–neural Losses

Reception in the inner ear.

Transmission in the eighth nerve.

CENTRAL LOSSES

Usually in brain pathways or cortex.

Plate 15.2

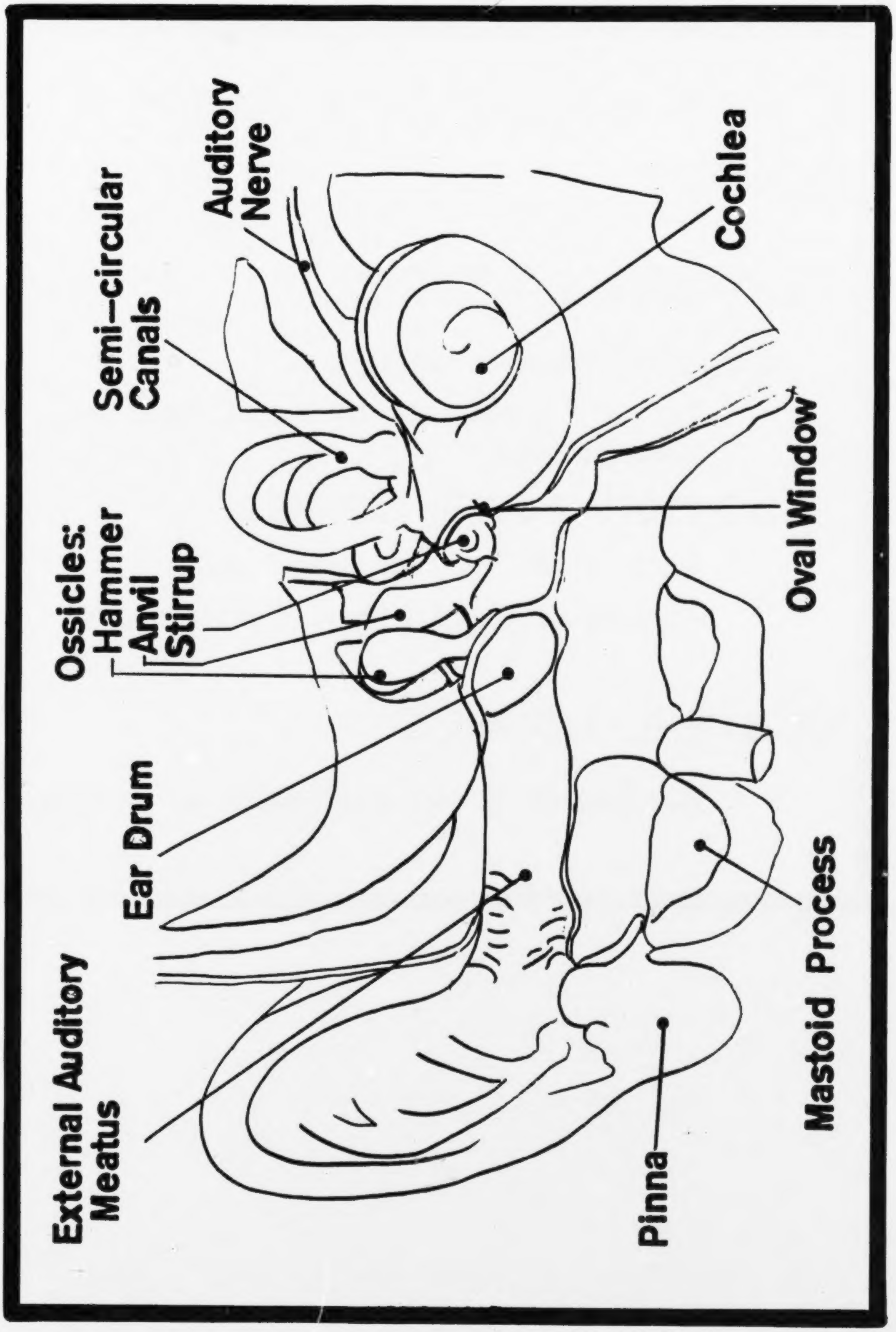
External Auditory Meatus
Ear Drum
Ossicles:
Hammer
Anvil
Stirrup
Semi-circular Canals
Auditory Nerve
Cochlea
Oval Window
Mastoid Process
Pinna

Plate 15.3

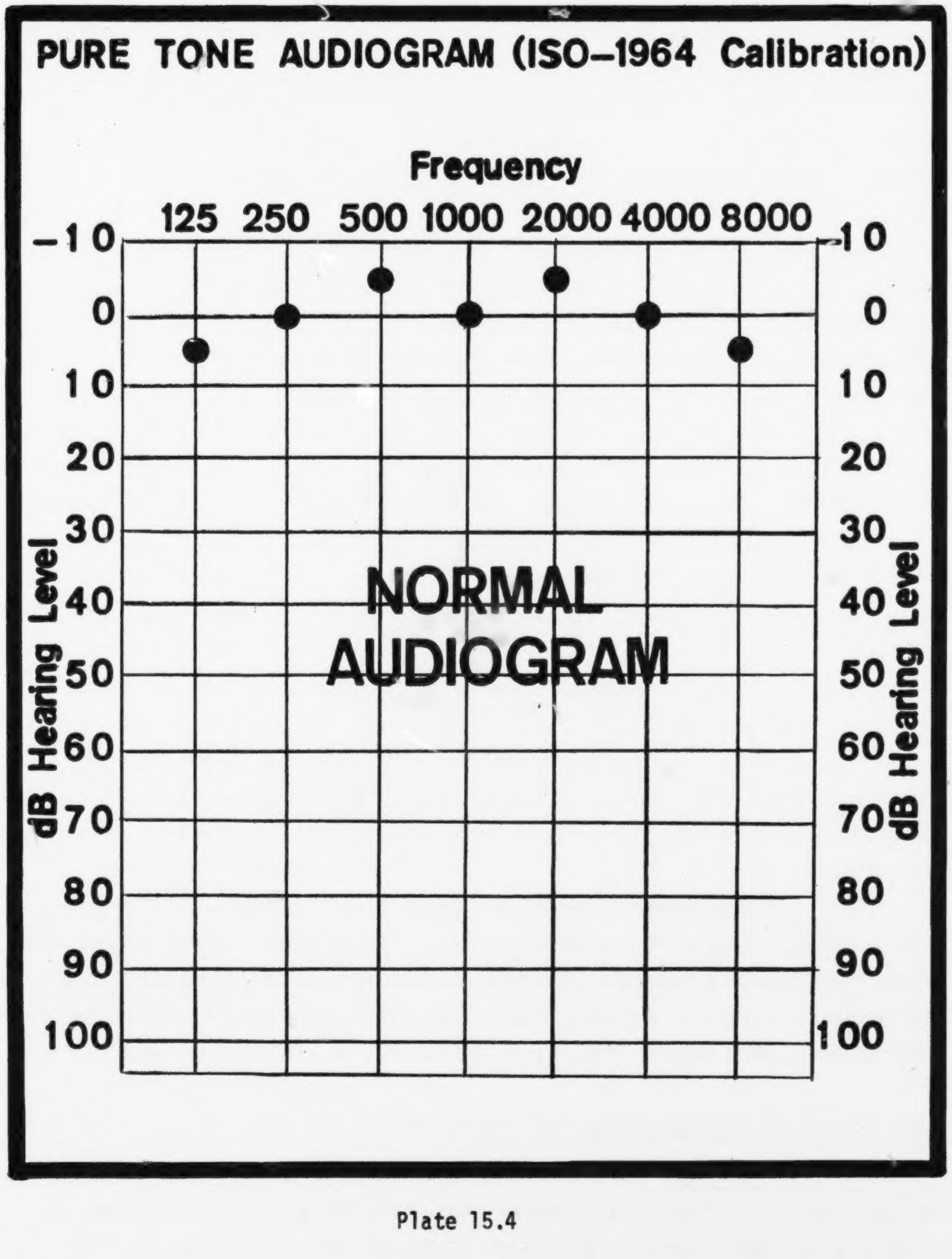
PURE TONE AUDIOGRAM (ISO–1964 Calibration)
Frequency
125
250
500
1000
2000
4000
8000
–10
0
10
20
30
40
50
60
70
80
90
100
dB Hearing Level
NORMAL AUDIOGRAM

Plate 15.4

Plate 15.5 represents a mild to moderate conductive loss. Notice that the shape of the profile is essentially flat with the same variation expected in any audiogram. There is a slightly greater loss in the lowest frequencies. The loss is about 30 decibels; conductive losses could be greater or less.

The two previous audiograms have been *air conduction* audiograms. Air conduction means that the sound was delivered to the ears by earphones and traveled down the canal by air. *Bone conduction* audiometric tests are administered by a vibrator which sets the headbones into vibration. The sound bypasses the usual ear canals to the end organ in the cochlea. Theoretically, bone conduction is a way to test the intactness of the sense organ. In a pure conductive loss (interference with the transmission of sound through the outer and middle ear to the inner ear) the air conduction thresholds would be down, but the bone conduction thresholds would be normal.

Sensori-neural losses involve the end organ of hearing or the nerve to the brain. These losses could be total if the nerve is cut or if the Organ of Corti end organ is destroyed by disease or loud noise. The losses could be congenital, as the result of inheritance or prenatal disease. Sensori-neural losses could involve specific frequencies severely while other frequencies could be essentially normal. These kinds of losses are often chronic and permanent and not often helped by medicine or surgery. Because of the frequency patterns of the loss or associated problems they may lead to significant discrimination losses.

Plate 15.6 is an example of one kind of severe sensori-neural loss. This child might have had meningitis, or his mother may have had German measles while pregnant. Note that low frequencies are normal, while the hearing curve drops off rapidly.

Central losses are the result of damage or malformation in the brain or its pathways. This loss may produce difficulty in understanding speech, even where sensitivity is normal. Children with severe problems of this kind rarely are found in a regular school. They have difficulty learning speech and require careful diagnosis to keep from being mislabeled as retarded or deaf.

What Should be Done About Hearing Problems?

1. *Case Finding*. Parents and teachers should be alert to the possibility of hearing loss. They must remember that there is no one specific way to detect a loss and there are many ways to be fooled. Losses may be mild or

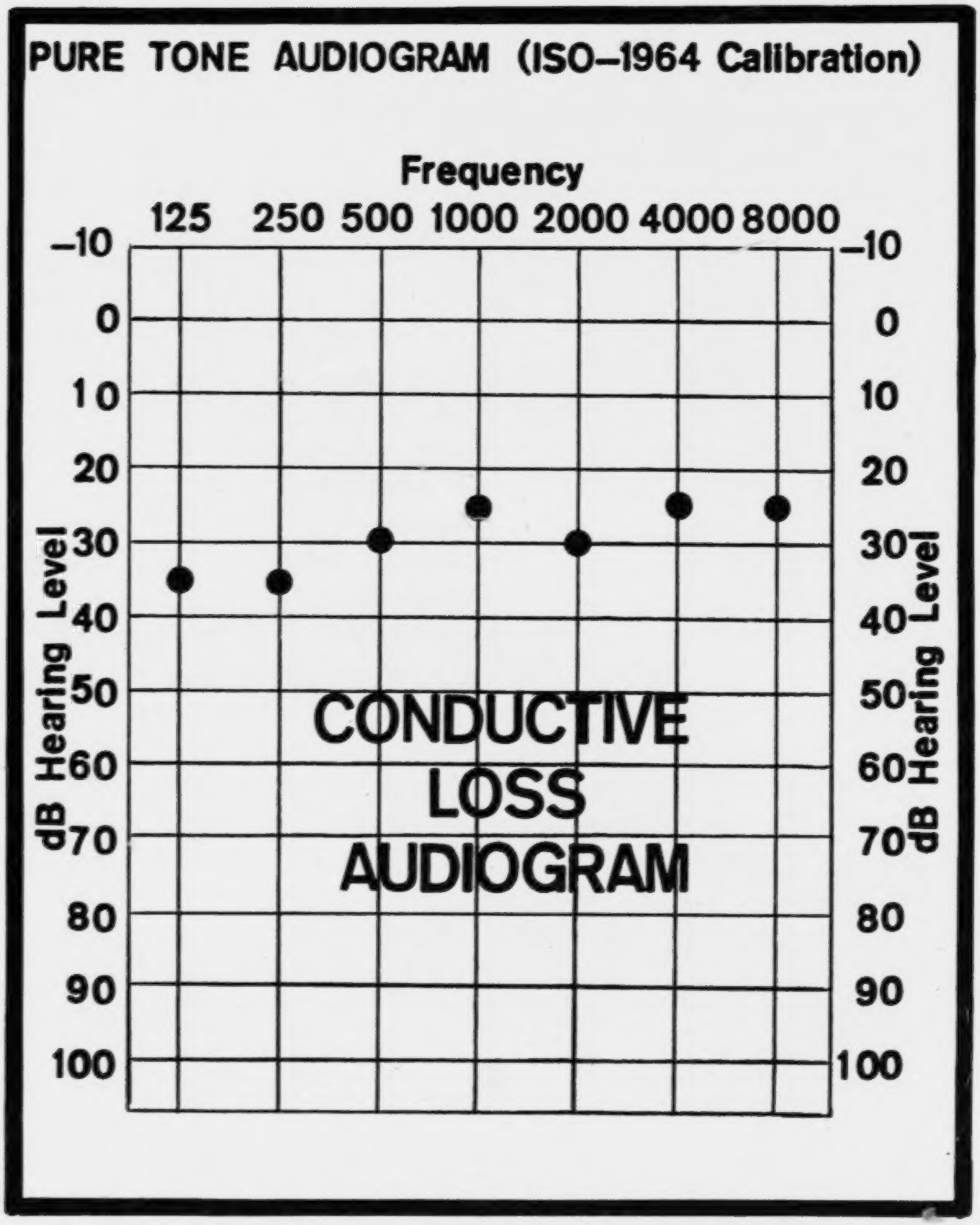
PURE TONE AUDIOGRAM (ISO–1964 Calibration)
Frequency
125
250
500
1000
2000
4000
8000
–10
0
10
20
30
40
50
60
70
80
90
100
dB Hearing Level
CONDUCTIVE
LOSS
AUDIOGRAM

Plate 15.5

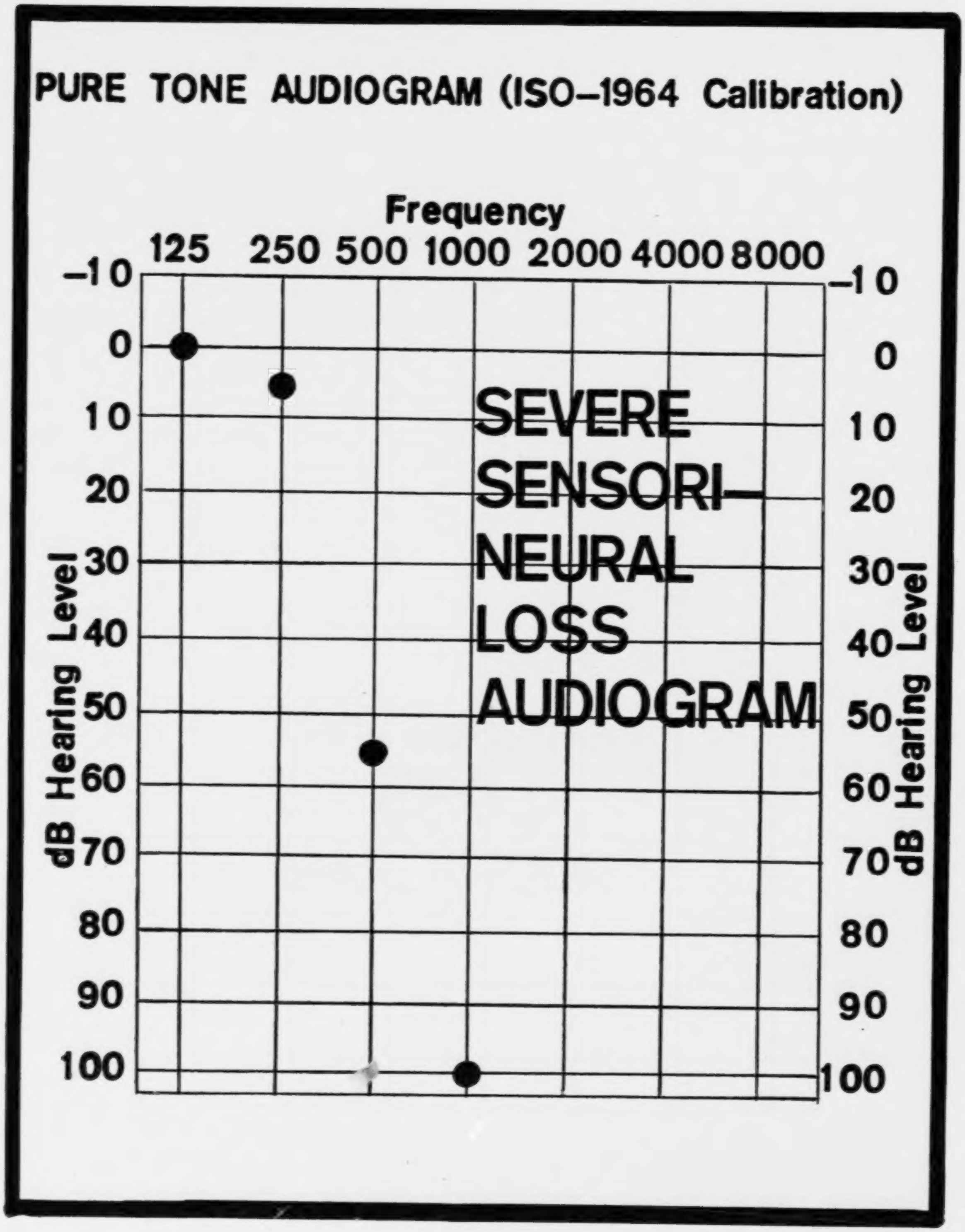
PURE TONE AUDIOGRAM (ISO–1964 Calibration)
Frequency
125
250
500
1000
2000
4000
8000
–10
0
10
20
30
40
50
60
70
80
90
100
dB Hearing Level
SEVERE SENSORI-NEURAL LOSS AUDIOGRAM

Plate 15.6

severe, temporary or chronic. There may be *physical evidence* of an infection such as running ears. Some of the most severe losses, however, give no such outward signs. There may be *complaints about pain* in the ear, but this is not common, and absence or denial of pain has little relation to a loss. The child may appear *dull* because he does not seem to understand.

As part of a total educational evaluation every child deserves a hearing test. A child may have a *history of loss*. Such a history should make us alert to the possibility that the loss has persisted or returned. Some children do recover from some losses, however, so a history is not proof of a present problem.

A child may say, "What?" a great deal. Such behavior is suspicious, but not definitive. Remember that a child with a chronic loss may not know what he is missing, so direct questions have limited value. The child who says he cannot hear may or may not have a loss (it is a good excuse for failure), but a child who says he *does* hear also may or may not have a loss. He may deny a problem because he really does not know or because there is often a reluctance to admit an abnormality. Some of the children with chronic significant losses have accepted the judgment that they are stupid.

Other things to look for:

1. unusual concentration on the face of the speaker;
2. inconsistent responses, especially if he is looking away;
3. silly responses, as if he does not know the topic being discussed;
4. shyness;
5. lack of volunteering;
6. seclusiveness;
7. speech problems.

The above symptoms could very well be symptoms of other problems. This is the reason for *screening*. Screening should be quick, relatively easy to obtain, and it should be a way of ruling out a significant loss in most cases.

The coin-click test and the whisper test are often suggested as a means of screening for hearing problems. These are very rough screening devices at best and many factors can detract from the validity of these tests. Neither of these tests is nearly as meaningful as a test with an audiometer. Also, some children become very good lip readers and may follow face-to-face conversation despite a severe loss.

2. Preliminary screening. The parent may take the child directly to the family doctor. The teacher, however, will usually check with the school nurse. The school nurse can do a preliminary evaluation, including a hearing test. Sometimes the school speech and hearing specialist may do some testing.

3. Referral to an otologist. Working through the parents, the school nurse or family physician may refer the child to a specialist. A medical doctor specializing in problems of the ear is called an otologist.

4. Medical treatment. The appropriate treatment depends entirely upon the reason for the loss. Fortunately most children in regular classes have hearing loses which can be helped by the doctor. He may remove obstructions in the outer ear canal, give medicine for infections, treat for allergies, etc.

5. Surgical treatment. This may be as relatively simple as opening the ear drum. Sometimes adenoids are removed to improve Eustachian Tube function. In severe infections there may be more extensive operations in the spongy bone cells near the ear. The otologist can make many delicate operations on the ear drum, the bones of the middle ear, and even on the bony shell of the inner ear. These operations are usually for adults.

6. Educational treatments. First, we must distinguish between deaf and hard-of-hearing. The deaf are most seriously handicapped in language. The most fundamental educational task is learning language and speech. The language difficulty of a deaf child so limits the child's educational program that the child often must enroll in a school for the deaf. Work with the deaf is often highly specialized, and the regular classroom teacher does not usually have a deaf child in class.

Hard-of-hearing children may have either temporary or chronic losses. If the condition is temporary, the child needs little special help beyond the considerations appropriate for his difficulty. The major concern of the classroom teacher is the chronic hard of hearing child. To help this child, we must:

a. give him the best hearing we can;
b. improve his other channels of communication;
c. supplement his classroom lessons.

Hearing Aids and Auditory Training

Hearing aids are usually electrical. They may be wearable or desk models and suitable for a single person or groups of persons. The selection of an appropriate hearing aid is properly the responsibility of an audiologist, after the otologist has agreed that a) the hearing loss is great enough to need amplification, b) the hearing cannot be improved sufficiently by medical treatment, and c) there are no medical contra-indications to an aid.

The hearing aid should be selected at a hearing clinic instead of shopping among hearing aid dealers. The qualified hearing clinic has a large library of aids from many manufacturers and is not biased by a profit motive. The clinic recommends aids on the basis of their help to the patient, availability of services, and cost.

Unfortunately, hearing aids do not compensate losses as precisely and efficiently as prescription eye glasses correct for visual problems. The sound of a hearing aid is artificial, and unwanted noises are amplified as much as wanted sounds. Therefore, the child must learn to use and appreciate an aid.

Hearing aids consist of a microphone, an amplifier, a power source, and a receiver. All these parts are in all hearing aids, even those built into eye glasses, or "within the ear". Hearing aids also have a volume control and some form of tone control.

If a child in the regular classroom has a hearing aid, the teacher should seek information from the speech or hearing clinician about use of the hearing aid. Four important points should be kept in mind.

1. Is the aid being worn? The speech clinician should be able to inform the teacher about when the aid should or should not be worn.
2. Is it operating? If not, check to be certain that the instrument is turned on and that the batteries are not dead.
3. Is it removed for play or recess? Check with the speech or hearing clinician.
4. Is it whistling? If so, the ear piece is probably too loose.

Auditory training. Basically, auditory training is training to make best use of the sounds that the child can receive. Auditory training includes training in the use of the hearing aid. Such training should be done by a special teacher, in addition to the regular classroom teacher.

Other Communication Channels

The teacher may depend on reading and writing, assuming that the child can use these channels to supplement verbal communication. Special ability to be considered is lip reading, or, as it is sometimes called, speech reading. Speech reading means understanding speech from watching the speaker's face. More than just the lips is watched. We all "speech read" or "lip read" to some extent. Teaching speech reading means helping the child use many clues to gain meaning. The child must watch expressions, gestures, and clues outside the person as well as the lips. Teaching lip reading is the job of a special teacher. The classroom teacher can help by making it easier for the child to see him speaking.

How to help a child read your lips.

1. Do not stand in front of a strong light such as a window.
2. Do not exaggerate your lip movement.
3. Do not change topics abruptly - help the child make the transition, perhaps with a few key words on the blackboard.
4. Have the child sit close to you if possible.

A child gets more from a combination of hearing and speech reading, than from either alone, so try to make use of both channels. Do not expect him to get every word. If a specific word is very important, put it on the board. Speech reading is common, not rare. You can try to use it, even if the child has had no special training.

Special Academic Tutoring

Children with hearing losses often miss information and usually can benefit from tutoring. The greater the loss, the more necessary the help. The special hearing teacher is often well prepared to assist with content material, but must coordinate his work with the classroom teacher.

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Hearing Problems

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CHAPTER 16

SPEECH PROBLEMS*

Speech is the end product of an individual's total physical and psychological structure, plus his own unique set of experiences. Therefore, a speech difficulty may be the result of any number or kind of physical, psychological, or environmental problems. Conversely, since speech is the primary channel of communication among people, a speech difficulty may be the cause of behavioral or adjustment problems.

A speech problem is said to occur when the speech interferes with communication, calls attention to itself, and makes the speaker feel maladjusted. "Speech problems"are not synonymous or identical with "communication problems". There are many kinds of communication problems which are not directly related to speech.

In general, the typical school child with a speech problem has normal intelligence, adequate hearing, normal physical structures, and adequate or satisfactory adjustment. Therefore, you cannot assume that a child has a physical, intellectual, or emotional problem just because he has a speech problem. However, a child could have any of these problems in addition to a speech problem, so he should be carefully checked (diagnosed) by the speech clinician to define the problem and its cause.

Communication and Language

Communication is a very broad process in which people interact and stimulate each other. It often appears that ideas and feelings are being exchanged when communication takes place. Although we typically think of words as the only medium of communication, many media are used (gestures, noises, written marks, smells, etc.).

Language is a code using spoken or written symbols as a medium of communication. It is usually expressed with a standard vocabulary of words strung together by some rules of syntax.

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*The CAI version of this chapter was written by Professor Asa Berlin.

Speech is the basic form of language. Speech is oral, and all other forms of language are derived from it.

Some, but not all, communication problems are the result of speech problems.

The Processes of Speech

During the production of speech many things are happening at the same time or in split second coordination. We must understand these processes to be able to describe speech and speech problems precisely. For simplicity, we may consider these processes as located below the eyebrows and above the eyebrows.

Below the eyebrows. We produce and modify sound in the processes of

1. respiration;
2. phonation;
3. resonance;
4. articulation.

1. Respiration provides the raw materials for the sound of speech: air in motion. Since the lungs have no muscles, we draw air in and force it out by changing the size of the chest. In other words, we make the chest cavity bigger to draw air in and smaller to force air out. Lifting of the ribs and lowering of the diaphragm (a domed muscle at the floor of the chest cavity) brings air in. To breathe out we lower the ribs, and contract the abdominal muscles, which indirectly pushes up the diaphragm.

2. Phonation refers to the production of voice; it takes place in the larynx or voice box. The Adam's Apple is the front of the larynx. In the larynx, the voice is produced at the vocal folds. These are also called vocal cords, vocal bands, etc,. The vocal folds are modified parts of the walls of the larynx that look like wedge-shaped shelves. They are kept apart for normal breathing, but are held together with moderate tension when voice is produced. Voice is produced as the result of the balance between air pressure below the larynx and the tension with which the vocal folds are held together. The folds blow apart then spring together, letting out puffs of air at rapid speed. For the average female voice this occurs about 250 times a second. The larynx determines the pitch and loudness, and to some extent, the quality of the voice. But all of these dimensions - especially quality - may be significantly modified by the resonators.

3. Resonance means the selective reinforcement or cancellation of parts of the voice. The major resonators of the voice are the oral cavity, the nasal cavity, and the pharynx. The size, shape, texture of walls, and size of openings of the resonators determine their characteristics. These variables determine the way the resonators modify voice. The quality of the voice is most affected by the resonators. Quality is defined as an individual recognizable characteristic, independent of pitch or loudness.

4. Articulation refers to the production of the sounds of a language. The sounds of a particular language are called phonemes. A phoneme is really a set of sounds in which the differences are less important than the similarities. Two sounds within a phoneme may be made in different ways and sound differently, but they are both recognized as the same phoneme.

Phonetics is a broad term that means the general study of the sounds of speech - including production, description, designation by written symbols, etc. Phonics is the relationship of printed letters in written language to the sounds of a language. This is what a reader uses when he "sounds out" a word. Unfortunately, there is often a poor relationship between printed representations of the word and the sounds in the English language.

In the process of articulation the phonemes are produced by the movement of certain parts of the speech mechanism. The principle articulators are shown in Plate 11.1. They are: 1) lips; 2) teeth; 3) gum ridge; 4) hard palate; 5) soft palate; 6) tip of the tongue; 7) blade of the tongue; and 8) back of the tongue.

The articulators narrow the air passage (sometimes completely) to produce the phonemes. Consonants are produced with varying degrees of closure of the air path. Vowels are produced primarily with open air passages. The shape of the cavities is changed to produce the vowels.

Speech processes above the eyebrows. We cannot study in detail the processes of speech that take place "above the eyebrows" but we must remember that disturbances here result in serious speech problems. Some factors that could result in serious speech problems are discussed in the paragraphs that follow.

1. Cerebration covers a wide range of mental abilities necessary for speech. This includes intelligence and all the activities of ideas and thought. Speech is learned, and the child's ability to learn rapidly or easily may have an influence on the way he learns speech.

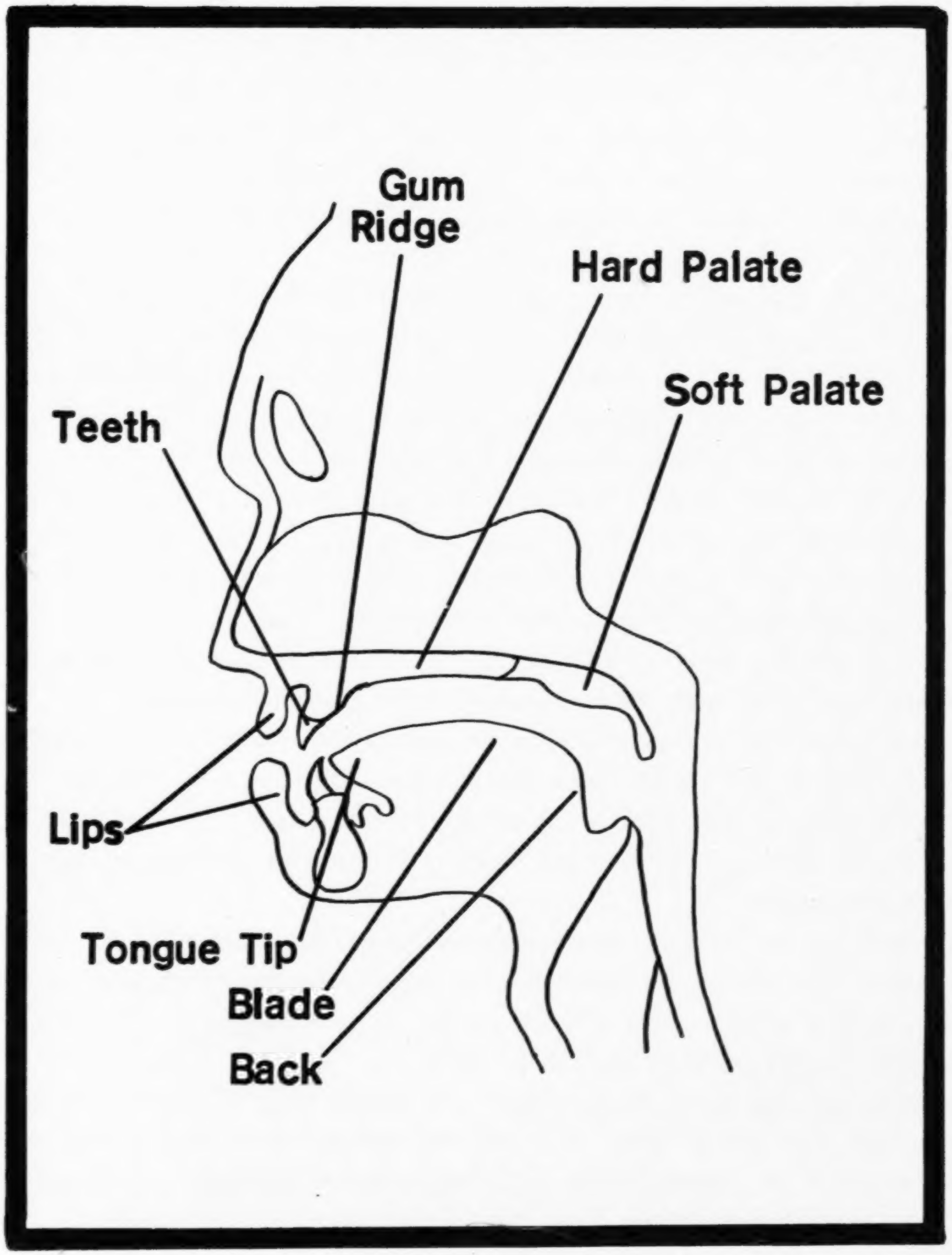
Gum
Ridge
Hard Palate
Soft Palate
Teeth
Lips
Tongue Tip
Blade
Back

Plate 16.1

2. Reception concerns input. Sensory input is important for both learning and maintaining speech. Hearing is a major channel for learning speech, but we also use the sensations of touch and position. As we talk, we monitor the output by hearing how it sounds and by feeling what our articulators are doing. We match these sensations against models we have stored internally.

3. Symbolization refers to the assignment of meaning. Speech uses a combination of sounds to mean something. These sounds have no meaning until we arbitrarily assign meaning. The process of giving meaning to sounds, patterns, movement, etc., is called symbolization. The ability to use symbols meaningfully is basic to the ability to use language.

4. Integration of the speech processes involves the working together of the brain, nerves, and muscles on an intricate, split-second basis. A failure to integrate them will result in serious speech problems.

Speech is a behavior. Speech must be considered a learned skill or behavior and is highly dependent upon maturation and education. This is true of speech as language (vocabulary, syntax, etc.) and as a system of phonemes.

Speech Problems

A problem may be said to exist when the speech

1. interferes with communication;
2. calls attention to itself;
3. makes the speaker feel maladjusted.

None of these three points tells us how serious the problem is, what kind of treatment is needed, or who - if anyone - should treat the problem. The teacher needs to know what kind of speech problem exists, whether or not the problem needs treatment, and who should provide the treatment if treatment is required. The speech clinician is very helpful in providing this information.

Kinds of speech problems. Speech problems are most typically classified on the basis of

1. how they sound;
2. how they are caused, or
3. a combination of 1 and 2.

1. Articulation errors means that there is something wrong with the production of the phonemes. Usually, articulation errors involve the omission, substitution, or a distortion of phonemes.

In articulation errors the speaker has difficulty producing a phoneme correctly. In pronunciation errors, the speaker is not saying the word or words in an acceptable manner.

Speech clinicians work with articulation problems but they usually do not work on problems of pronunciations. Many teachers, however, become concerned about pronunciation errors. Pronunciation is determined by usage, not the spelling, history, or any other criteria other than the way the word is said. A child who makes a pronunciation error can probably say the word correctly if he wants to, just by imitating someone who does say the word correctly. Teachers are sometimes overly concerned about pronunciation errors. It is good to remember that pronunciation is determined by custom and usage. Therefore, many acceptable pronunciations change with time. A pronunciation that was considered unacceptable or substandard at an earlier date may be completely acceptable today.

Causes of articulation problems are commonly listed as follows:

1. developmental slowness;
2. poor opportunities for learning;
    - inadequate models
    - little opportunity to practice
    - little reward for attempts
3. emotional problems;
4. physical deficiencies;
    - missing or deformed articulators
    - paralysis
5. coordination difficulties;
6. feedback problems
    - hearing loss
    - inadequate sensations for position of articulators.

It is often very difficult to determine the exact cause of any speech problem. The speech clinician has to remember all of the possibilities. He must also realize that some people articulate well despite a history of many of these causes. Don't jump to the conclusion that a child has a speech problem simply because he misarticulates one or two words or pronounces some words differently than you would.

Although speech therapy is usually the job of the speech clinician, speech improvement can and should be the job of the classroom teacher. Many articulation problems related to slow maturation or insufficient training opportunities can be helped by speech improvement in the classroom.

2. Rhythm problems are related to the flow of speech. The most serious problem involving the normal flow of speech is stuttering. Considering a child a stutterer is so serious we must consider other similar sounding problems.

Another rhythm problem is situational nonfluency. We are all nonfluent normally. Some things make these nonfluencies worse. Some persons are able to speak more fluently in certain situations than in others. A person who is unaccustomed to speaking before large groups might be somewhat nervous when asked to speak. His nervousness might affect his fluency. Each of us reacts differently to listeners, depending upon our experiences. A speaker is more apt to be nonfluent when he is sick or worried or excited than when he feels fine, is calm, and happy. The speaker's condition will affect his fluency. The factors of the listeners, the content, and the speaker's feelings will affect the fluency of the speaker.

The same variables which affect the fluency of a normal speaker also affect the stutterer. However, there is often a qualitative as well as a quantitative difference between nonfluencies of normal speakers and stutterers. The stutterer is apt to be more nonfluent, make bizarre sounds and movements with his nonfluencies, and may react to his nonfluencies more severely.

The stutterer can often make a distinction between his "normal" nonfluencies and his stuttering. The stutterer is generally free from motor and coordination problems. He knows what he wants to say, but has trouble getting the word out. This problem is often related to the specific words or sounds. So, if he avoids these he can continue to talk with normal fluency.

Stuttering is usually inconsistent. This is worse than a consistent problem and leads to greater anxieties. Stuttering is the Russian Roulette of speech problems. The stutterer is always on edge, waiting for the gun to go off, waiting for the time he'll get stuck. Because of the inconsistency of his problem the stutterer is tempted to do one or both of two things which eventually complicate his problem. He may try to conceal his difficulty or he may look for the magic button that permits him to stop stuttering.

The stutterer's symptoms gradually become more severe. He discovers a behavior, or several behaviors, that seem to help him speak without stuttering. Since the behavior seemed to work once, he learns to use it again. Some examples are snapping fingers, stamping a foot, slapping the thigh, inserting filler phrases, pretending not to know an answer, pretending to forget a word, or behaving mischievously.

Stutterer's symptoms change with time and are modified by experiences. At first the child is really not aware of his interruptions or repetitions. As he becomes more aware, he begins to fight or avoid speech, and complete stoppage increases. Blocks are more serious forms of stuttering than open repetitions. Repetitions may be more conspicuous.

Stuttering is sometimes confused with cluttering. The clutterer stumbles over sounds and has jerky rhythm as a function of his speaking rate. Much of the well meaning, but generally useless, advice given to stutterers will help a clutterer. The clutterer's speech usually smooths out when he slows his rate of speaking.

Over the years, physical, psychological, and environmental causes of stuttering have been suggested, but none of the suggested causes has received unqualified acceptance. The popular theories today assume that stuttering is a behavior that has been learned as a result of unfortunate attitudes and experiences. It is assumed that the behavior can be unlearned. Each child's case must be dealt with on an individual basis. Counseling and/or psychotherapy, in addition to speech therapy, may be needed by some children. The classroom teacher's role will be supportive, and therapy should be done by speech clinicians.

3. Voice problems are problems of phonation and/or resonance. Voice problems can usually be classified as problems of:

   1. pitch;
   2. loudness;
   3. quality;
   4. no voice.

Pitch problems generally can be described as problems of inappropriate placement, pitch that is too high or too low, or inappropriate melody inflections. "Too high or too low" means the pitch doesn't fit the speaker's sex or age. Also, the pitch could be inappropriate for the individual's vocal equipment and may sound strained or may damage the larynx.

Pitch problems in young children - such as a boy who sounds too soprano - are probably not true problems. Maturation and growth will solve them. Forcing the voice up or down is worse. Voice problems become more of a problem in adolescence when sexual identification, hero-worship, and other forces impel the youth to modify his voice to be more attractive.

Inappropriate inflection is often part of a total accent or dialect, and probably should not receive special attention unless communication or adjustment problems occur.

Variations in loudness become problems only as they are inadequate or inappropriate for specific situations. Shouting during a polite conversation or speaking in class so softly that the answer cannot be heard are two examples. In the absence of other difficulties, loudness problems are often related to the specific speaking situation, and improve when the situation changes. Only if the problem seems greater than can be explained by the situation should the child be referred for help. Sometimes loudness of voice is a reflection of total personality and resists speech training.

There are many kinds of quality problems and they are usually identified descriptively by terms such as breathy, hoarse, husky, strident, nasal, denasal, etc. Such quality problems may be the result of learning, either unconscious learning or deliberate imitation. The more deviant problems may indicate a physical deformity, paralysis, or growth in the larnyx. These physical problems may be congenital (present at birth), or develop as the result of injury or disease. Growths in the larynx may be classified as malignant or benign. Malignancies (cancer), must have surgical or radiological treatment. Fortunately, they are rare in children. Benign growths may be removed surgically, but this is a medical decision. Some growths (such as "singer's nodes") are the result of vocal abuse - too much shouting, often at the incorrect pitch.

The complete loss of voice is very serious. Fortunately this is rarely a problem with children. The most common reasons for this condition are surgical removal of the larynx (as in the case of cancer of the throat) or a hysterical conversion symptom.

The more common causes of voice problems are:

1. physical difficulties
    - deformity of larynx or resonators
    - paralysis
    - benign or malignant growths
2. emotional problems
3. faulty learning or habits
    - poor hearing
    - poor models

4. Language problems range from the total inability to produce words to the other extreme of fluent but non-standard speech. Speech pathologists are only beginning to understand the subtle ramifications of language problems in many children now considered essentially normal. They understand somewhat more about the extreme language disorders.

Aphasia is the major example of a serious language disorder. A person with aphasia has difficulty understanding and/or producing the symbols of language, as the result of brain injury. This is not the result of paralysis, hearing loss, or other conditions, even though these may exist also. Not all aphasics have the same kind or degree of difficulty. One may not understand what he hears, but still be able to write. Another may produce a jumble of words, but recognize when he hears himself that it was not what he tried to say.

Some children have a difficulty similar to that of aphasic adults. The children have difficulty understanding or producing speech even when there is no evidence of brain injury. Unlike adults who have lost their speech, the children never had language. They may never learn to speak or understand words. Often these children are incorrectly diagnosed as deaf or mentally retarded.

"Ghetto" or "inner-city" language is considered a second language; non-standard English, rather than substandard English. The present trend is to teach standard English as a second language rather than to "correct" the child's local speech and language patterns.

Some Final Comments for Teachers

1. Be skeptical of your assumptions of cause. Problems rarely have a single cause. Do not "diagnose" a child as being a stutterer because he has occasional non-fluencies. Similarly, do not diagnose a child as having a speech handicap or any other handicap on the basis of only one or two instances of a behavior which is associated with a given handicap or impairment.

2. Remember that no one hears himself objectively without training. A child can be trained to identify the differences between different speech sounds and different pronunciations of the same word.

3. We can only imitate what we can do. If you are not able to make a sound you have to learn to imitate it, and even to recognize it.

4. Parents, teachers, and specialists, are a team; they must work together.

5. The child with a speech problem has a need to talk in the real world, including the classroom. In addition to speech correction, he needs encouragement and support when he speaks in the real world.

6. Find ways to have the child talk. Any speech should be rewarded, not just fluent speech. The child should be encouraged to talk even if he stutters.

7. Don't let a child make up oral work by substituting written work.

8. Call on the child near the beginning of the class period. Waiting seems to generate anxiety which, in turn, makes speaking more difficult.

9. Excuse the child from speaking if he is having an unusual amount of difficulty one day.

10. If other children laugh or tease a child about his speech, explain to them why their actions are undesirable. Children are sometimes just thoughtless rather than deliberately cruel.

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CHAPTER 17

METROPOLITAN READINESS TESTS[*] [**]

The Metropolitan Readiness Tests exemplify the use of a group test of general aptitude for the purpose of screening. Tests such as the Metropolitan Readiness Tests are often routinely administered to children early in their school experiences.

The test is intended to measure the extent to which young children have acquired skills and abilities which contribute to readiness for the tasks typically required in first grade. Those children who perform well on the test have a good chance of achieving first grade work without difficulty. Those children who do not perform well will probably experience some difficulty in learning during the first grade.

The test is designed to assess the most important components of first grade readiness:

1. comprehension and use of oral language;
2. visual perception and discrimination;
3. auditory discrimination;
4. richness of verbal concepts;
5. general mental ability; capacity to infer and to reason;
6. knowledge of numerical and quantitative relationships;
7. sensory-motor abilities of the kind required in handwriting, writing of numerals, and drawing;
8. adequate attentiveness; the ability to sit quietly, to listen to and follow directions.

The Metropolitan Readiness Tests should be administered at the end of the kindergarten program or at the beginning of the first grade year. The test is comprised of six required subtests and one optional subtest:

1. word meaning;
2. listening;
3. matching;
4. alphabet;

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[*] HILDRETH, G. H., GRIFFITHS, N. L., & MC GAUVRAN, M. E. Manual of directions Metropolitan Readiness Tests. New York: Harcourt, Brace, and World, Inc., 1965.

[**] The CAI version of this chapter was written by Miss Mary Ann Villwock.

5. numbers;
6. copying;
7. draw-a-man (optional).

The test manual outlines the following uses of the Metropolitan Readiness Tests for the classroom teacher:

1. obtain quick indication of readiness of each of her pupils to do first grade work, especially with reference to reading and arithmetic;
2. identify specific areas in which a child (or group) appears not to have attained the level of maturity of skill adequate for coping with first grade work;
3. as an objective, reliable basis for the initial grouping of pupils for instructional purposes;
4. assess the range of readiness among her pupils so as to better define her instructional problems;
5. adapt instruction to the level of the class and of subgroups she may organize;
6. indicate when formal work in numbers and in reading should be started;
7. determine whether pupils have progressed in accordance with their readiness or aptitude by comparing readiness test results with achievement test results or teacher grades at the end of the year.

Refer to the specimen set for more detailed information about the Metropolitan Readiness Tests.

CHAPTER 18

MOTOR, PHYSICAL, AND HEALTH PROBLEMS*

This chapter deals with motor and organic problems which may interfere with children's learning. Motor, physical, and health problems almost always are reflected in a reduced ability to respond in appropriate ways. The output channel of the Information Processing Model is the unit most likely to be affected by these kinds of problems.

A child's inability to respond adequately may be misinterpreted as an unwillingness to respond; the child may then be erroneously labeled as emotionally disturbed or as a trouble maker. Also, the child may be erroneously labeled as mentally retarded because he does not respond as normal children do. This fact has been pointed out in earlier chapters: different disabilities (e.g., mental retardation or physical disability) may produce similar behaviors in children. Avoid labeling a child as having a particular disability just because he shows one or two symptoms of that one characteristic of the disability.

On pages 59-64 of the textbook (Teacher Diagnosis of Educational Difficulty, Smith, 1969) are listed a number of techniques for the diagnosis of perceptual-motor problems. Some of the same techniques are also used for the diagnosis of physical and motor problems. Most notably, the medical examination and tests numbered 6, 7, and 8 on pages 60-61 are used to evaluate motor and physical abilities of children.

Cerebral Palsy

An organic impairment which results in a mobility problem is cerebral palsy. Cerebral palsy is defined as a condition characterized by any abnormal alteration of movement or motor function arising from defect, injury, or disease of the nervous system in the cranial cavity (the brain).

The most distinctive characteristic of cerebral palsy is alteration of motor function. If there is damage to the brain and it does not result in an alteration of movement or motor function, the term cerebral palsy is not used.

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*The CAI version of this chapter was written by Mr. Gerald Robine and Professor Carol A. Cartwright.

The fact that a child has cerebral palsy is not educationally relevant since cerebral palsy manifests itself in a wide variety of ways. It is more important for a teacher to know the:

1. type of cerebral palsy;
2. number of limbs affected;
3. severity of the condition;
4. associated disorders.

This type of knowledge and similar types of knowledge for other organic impairments may be educationally relevant for the teacher. It is helpful for teachers to be aware of attributes of certain organic impairments for these reasons:

1. aids in arousing initial suspicion that a problem exists;
2. provides guidelines as to type of data to be gathered by teachers; and
3. serves as a guide for teachers in determining which educational modifications are needed, if any.

Types of cerebral palsy. Spasticity is characterized by a) involuntary contraction of the muscles when they are suddenly stretched, b) jerky movements - especially of the upper extremities, and c) movements which seem to be explosive and are poorly performed. People who have this type of cerebral palsy are sometimes referred to as spastics.

Athetosis is characterized by a) involuntary contraction of successive muscles resulting in almost constant movement of the extremities, b) extremities move in worm-like fashion, c) facial grimacing, and d) if ambulatory, the child walks in a lurching, stumbling manner. People who have the athetosis type of cerebral palsy are referred to as athetoids.

Ataxia is characterized by a) impaired balance and sense of orientation and space, b) uncoordinated movements, and c) stumbling or weaving gait. People with this type of cerebral palsy are referred to as ataxics.

Rigidity is characterized by a) widespread continuous muscle tension, and b) "lead pipe stiffness."

Severity of cerebral palsy. The severity of cerebral palsy ranges from mild to severe. A person who is mildly affected is one who can walk and talk, and who appears physically normal except that fine precision of movement may be impaired. The person who has moderate involvement can walk unassisted, but his gait may be different from normal. He may have the use of only one arm and his speech may be indistinct. An individual is severely involved if he is unable to walk unassisted or to talk clearly, and has little use of his hands.

Identification of children who have cerebral palsy. Usually, children who have cerebral palsy are identified before entering school. If the teacher is informed that a child has cerebral palsy, he should request assistance in order to provide the most appropriate educational program for the child. Help may be obtained from the nurse, psychologist, special teacher, visiting resource room teacher, or other persons so designated by the school district.

It is possible that some cases of cerebral palsy will not be detected prior to the time a child enters school. A child who has mild involvement is more likely to enter school without having his cerebral palsy diagnosed. The tasks required of a school-age child are more likely to require precision and fine motor skills than activities undertaken in play at home. Therefore, school situations provide opportunities for a teacher to become suspicious of a case of mild cerebral palsy. Parents or others may not have any opportunity to even to be aware of the lack of precision and fine motor behavior.

It is more important for the teacher to be concerned with the specific behaviors and associated disorders that a child with cerebral palsy manifests than the specific terminology used to indicate the type or severity of the problem. Although cerebral palsy is characterized by alteration of motor function, disorders associated with cerebral palsy may have educational relevance. Speech problems and apparent mental retardation are the disorders most often associated with cerebral palsy. These disorders and others are listed in Plate 18.1.

Although the intelligence of cerebral palsied children ranges from retarded to gifted, a higher percentage of cerebral palsied children score in the retarded range than children without cerebral palsy. Surveys indicate that about 50% of children with cerebral palsy score below an IQ of 70 on individually administered tests of intelligence and are judged to be mentally retarded. There does not seem to be a direct relationship between severity of the condition and IQ score. The severely involved cerebral palsy child may have a high intelligence test score and, conversely, a mildly involved child may score in the severely retarded range.

Since many cerebral palsied children are limited in their ability to perform well on motor tasks that often occur in IQ tests, caution should be used in interpreting IQ scores of cerebral palsied children. Cerebral palsied children also may be penalized when given the verbal portion of an intelligence test because approximately 75% of the cerebral palsy population has speech problems. The examiner may not fully understand the verbal responses of a child

Disorders Associated with Cerebral Palsy

Mental Retardation
Speech Problems
Vision Problems
Hearing Problems
Seizures
Perceptual Disorders

Plate 18.1

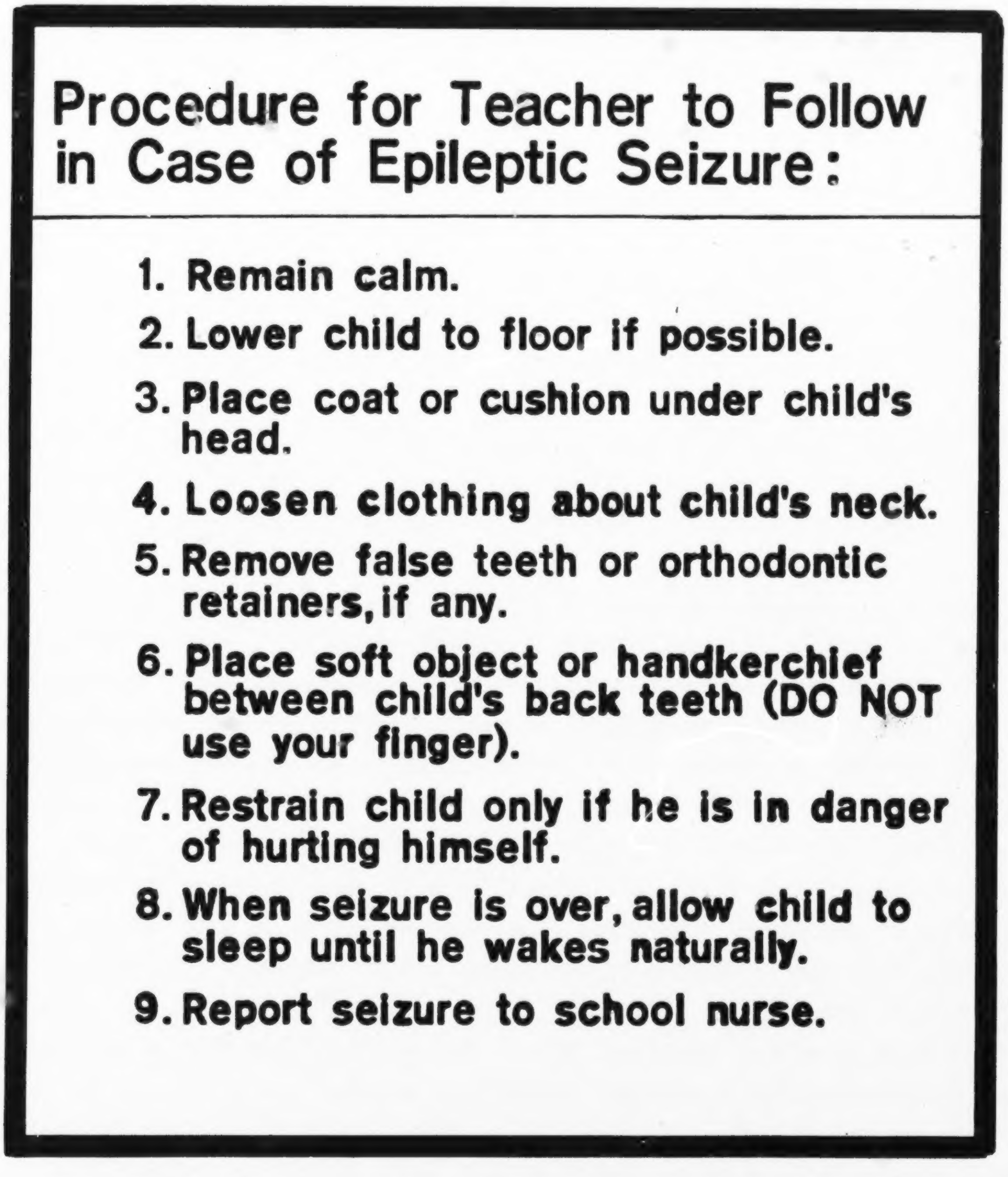
and assume that the child does not know the answer to a question on an IQ test, when in fact the child knows but his speech problem prevents him from accurately giving the answer. It should be clear that IQ test scores of cerebral palsied children may not be as valid as the IQ test scores of physically normal children. Therefore, extreme caution should be used when interpreting the results of intelligence tests of children with cerebral palsy. Tests scores are usually suspect when they are low, but rarely suspect when they are high. It is much easier to get an artificially deflated score than an inflated one. The poor speech and motor abilities of the cerebral palsied child may prevent him from answering questions he really knows. Thus, his test results may be invalid.

Cerebral palsied children are prone to the same kinds of visual defects as physically normal children. In addition, there are some visual defects which seem to be specifically related to cerebral palsy. About 50% of the cerebral palsy population have oculomotor defects, and about 25% have subnormal vision. This does not mean, however, that 75% of the cerebral palsy population have visual problems. Part of the 25% who have subnormal vision also have oculomotor problems. Thus, fewer than 75% of children who have cerebral palsy have vision problems. The same factor which causes a child to have cerebral palsy may contribute to a vision or hearing problem. Most surveys indicate that about 15% of the cerebral palsy population have subnormal hearing. Just as with visual disorders, cerebral palsy children are prone to the same kinds of speech problems which are related to cerebral palsy. These include speech problems of a neuro-muscular nature. If the nerves which control the muscles required for speech are damaged, speech production may be faulty. In addition, cerebral palsy children many times have difficulty controlling the release of air from their lungs. The resulting poor breath control can create speech problems.

Epileptic seizures, commonly referred to as seizures, or fits, seem to be present in about 35% of the children with cerebral palsy. The procedures a teacher can follow to care for a child during a seizure are shown in Plate 18.2.

Perceptual problems of cerebral palsied children. Another educationally relevant disorder associated with cerebral palsy is the problem many cerebral palsied children have in perception. The perceptual process is very complex, and learning problems resulting from faulty perception are not unique to children with cerebral palsy. Perceptual problems may influence the learning efficiency of any child, regardless of whether or not he is motorically impaired. More detail about perceptual problems of children is given in Chapter 13 of this course. It is not known exactly how many cerebral palsied children have perceptual problems, but it is suspected that most of them have an auditory perception or a visual perception deficit.

Involvement of limbs. Children with cerebral palsy often have limited control over certain parts of their bodies. Plate 18.3 illustrates five different results of involvement or paralysis. Monoplegia is paralysis or involvement of one arm or leg. Paraplegia is paralysis of the two lower extremities. Hemiplegia is paralysis or involvement of one side of the body. Triplegia is paralysis or involvement of both legs and one arm. Quadraplegia is involvement or paralysis of the body below the neck.



Procedure for Teacher to Follow in Case of Epileptic Seizure:

1. Remain calm.
2. Lower child to floor if possible.
3. Place coat or cushion under child's head.
4. Loosen clothing about child's neck.
5. Remove false teeth or orthodontic retainers, if any.
6. Place soft object or handkerchief between child's back teeth (DO NOT use your finger).
7. Restrain child only if he is in danger of hurting himself.
8. When seizure is over, allow child to sleep until he wakes naturally.
9. Report seizure to school nurse.

Plate 18.2

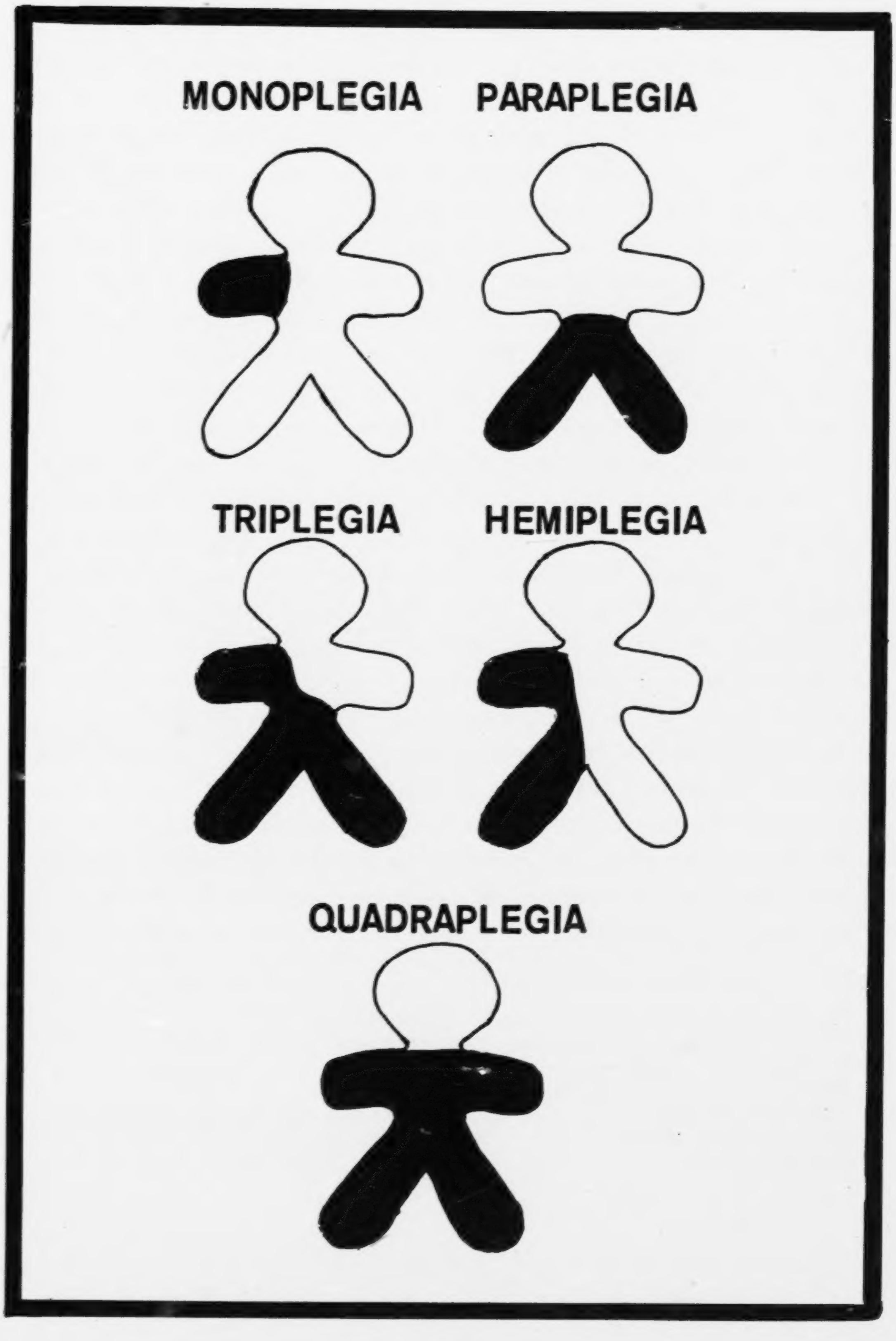

MONOPLEGIA
PARAPLEGIA
TRIPLEGIA
HEMIPLEGIA
QUADRAPLEGIA

Plate 18.3

Brain Injury

Some children in the schools exhibit many of the same kinds of learning problems as cerebral palsied children but do not have the pronounced motor difficulty associated with cerebral palsy. Children classified in this category may have slight neurological damage or suspected neurological damage. They have been called, among other things, brain injured children. The use of the term "brain injured" has been hotly debated for years. Critics of the term hold that the term "brain injured" is not educationally useful because teachers can do very little to treat injured brains. In addition critics hold that children who have been assigned this label are so heterogeneous on learning and behavioral characteristics that it is virtually impossible to develop teaching strategy appropriate for all children in the category.

Some children have organic impairments which are not easily discovere merely looking at the children. "Brain injured" children are an example o this phenomenon. We cannot merely look at a child and see the injury to hi brain. Certain groups of children exhibit characteristics which used to be termed evidence of brain injury. These children may or may not be judged as brain injured by a neurologist. Nevertheless they do require a modification the regular school program in order to progress in school. Although we canno actually see brain injury, we can see certain behaviors which many people believe to be associated with brain injury. Although it is somewhat inconsistent with the overall philosophy of this course, we will use the term "brain injured" in this section. The term will be enclosed in quotes to indicate that we are using that term for lack of a better term. A variety of different terms for the condition have been suggested and are listed below. See the article by Dunn (1967) for a more detailed discussion of this topic.

Substitute Terminology for "Brain-Injured" Children

Minimal Neurological Handicap
Minimal Cerebral Dysfunction
Developmental Imbalance
Chronic Brain Syndrome
Maturational Lag
Hyper-Kinetic Child
Organic Child
Hyper-Active Child
Perceptually Handicapped
Minimal Brain Dysfunction
Strauss Syndrome
Central Nervous System Dysfunction
Learning Disorder
Learning Disability

Regardless of the terminology used, it seems safe to say that there are children who exhibit certain characteristics which interfere with the learning process and cause them to have a difficult time adjusting to the school situation. However, all children called "brain injured" or some similar term will not exhibit the same constellation of characteristics.

It is often said that brain injured children are hyperactive or that brain injury causes hyperactivity. It was pointed out in earlier chapters that brain injury may be associated with hyperactivity but that brain injury also may be associated with the opposite condition - hypoactivity. Through the years some groups of educators and psychologists have come to a tacit understanding that we should focus on the educationally relevant behavioral characteristics of children who might be brain injured rather than argue whether a child really has neural damage. They have labeled this group of so-called "brain injured" children as hyperactive children. Some of the behaviors which seem to be characteristic of hyperactive children are listed in Plate 18.4.

Hyperactive children sometimes have a difficult time shifting from one activity to another. This persistent continuation or repetition of an activity is called perseveration.

Perseverative behavior seems to be increased if the activity has been particularly rewarding to the child.

Another characteristic which is often attributed to "brain injured" children is that of making reversals. Some examples of this behavior are reading a SAW for WAS, ON for NO, etc. Keep in mind that all "brain injured" or hyperactive children do not exhibit all of these characteristics. Also, some of the characteristics, such as reading reversals, are fairly common among young normal children. "Brain injured" children seem to be less well coordinated than normal children. They have a tendency to be awkward in physical activities, and often seem unable to judge their body positions in space.

Hyperactive children seem to have a very difficult time remaining still for any period of time. This kind of hyperactivity is manifested when a child is constantly getting out of his seat, constantly talking, or continually changing from one activity to another without completing a given task.

Behaviors Characteristic of Hyperactive Children

1. Attraction to detail rather than wholeness.
2. Easily distracted from task by extraneous stimuli.
3. Inability to distinguish central figure from irrelevant background.
4. Difficulty producing geometric figures from memory.
5. Difficulty reproducing melodies played on piano.
6. Difficulty identifying objects by touch alone.

Plate 18.4

Another characteristic of "brain injured" children is that they are sometimes disinhibited in social situations. They react impulsively and over emotionally. These two characteristics are also exhibited by emotionally disturbed children. We mention this so that you will not immediately jump to conclusions about a child's condition without examining a variety of his behaviors under various conditions. Remember the statement in Chapter III, "Identical behaviors may be found in children with different disabilities."

Epilepsy

In addition to cerebral palsied children who have seizures, there are many children who do not have cerebral palsy but who do have seizure problems. These children are generally referred to as epileptics. Certain facts and information about epilepsy can be useful to a teacher if she has an epileptic child in her class.

Epileptic seizures are generally classified under two broad categories: grand mal seizures and petit mal seizures. Grand mal seizures are more readily observable, more memorable, and more severe than the petit mal variety. When a child is having a grand mal seizure he usually becomes rigid, falls, and his body shakes in a jerky fashion for one to two minutes.

Petit mal seizures are more subtle in appearance and more difficult to detect than grand mal seizures. Petit mal seizures are characterized by a brief loss of consciousness. In some varieties of petit mal seizures, an individual may have as many as one hundred attacks per day - each attack lasting only a few seconds. Sometimes petit mal seizures are accompanied by eye blinking or by twitching of the muscles of the face or head. Obviously, all children who have brief or even frequent lapses of attention do not have epilepsy. The chances are that only one child out of two hundred has any type of epileptic disorder. Thus, do not base a conclusion of epilepsy on a single incident or symptom. The symptoms are presented in isolation merely for clarity and illustration. The teacher should be alert, however, to recognize that frequent lapses of attention, facial twitching, eye blinking, etc., may be symptomatic of a problem. Petit mal seizures are easily confused with other inappropriate behaviors, such as inattention, boredom, day dreaming, fatigue, anxiety, and distraction. Problems such as mental retardation, poor vision or hearing, or emotional disturbance may produce behaviors similar to petit mal seizures.

Treatment of epilepsy. The most widely used treatment for epilepsy is drug therapy. Estimates indicate that drug therapy totally alleviates seizures in about 50% of those children affected. In another 30% partial control is evidenced. The educationally relevant aspects of the treatment of epilepsy revolves around the side effects of the drugs used. The difference between a dose which prevents attacks and one which causes toxic symptoms may be small. Therefore, experimentation with different dosages for each epileptic is necessary. Dosages are, of course, prescribed by a physician. Side effects of drugs used to treat epileptic seizures are:

1. dizziness;
2. unsteadiness;
3. rash;
4. swollen gums;
5. drowsiness;
6. lethargy;
7. stomach upset.

Chronic Health Problems

It is possible that children with other organic impairments or health problems enter school without having their problems identified. An observant teacher may notice the symptoms which suggest health problems exist.

The attendance record may be a starting point in identifying a child with an undetected health problem. A child who has a record of frequent absences may have a lowered resistance to infection which is due to some undetected health problem. For example, children who are malnourished have a lowered resistance to infection. As usual, we need to resist jumping to conclusions. An unusual absence, along with other signs such as listlessness, fatigue, inactivity, and failure to gain in height and weight would arouse a suspicion of a health problem such as malnutrition.

Careful observance of children's eating habits can produce clues to an undetected health problem. Loss of appetite is one of the symptoms of a cardiac, or heart problem. Of course, loss of appetite is only one symptom and we would not suspect a cardiac problem unless other symptoms were also present. Other symptoms to watch for are rapid respiration after only slight exertion, blueness of nails or lips, fatigue, involuntary restriction of activity by the child. On the other hand, constant hunger, accompanied by loss of weight and strength and by consumption of large amounts of water, are signs suggesting diabetes.

Problems of motor coordination have been referred to in other parts of this course. Some of the symptoms which might suggest an orthopedic or muscular defect are listed below:

1. walks with unusual gait;
2. falls frequently;
3. climbs stairs with difficulty;
4. stands with unusual posture;
5. complains of backaches;
6. tilts head;
7. hangs arms and hands limply;
8. complains of pain in extremities.

When a teacher has collected data indicative of some health problem, it is not necessary for the teacher to attempt to identify the specific health problem in order to make a referral. Usually teachers do not have the necessary training to pin-point the medical problem; that is the job of the medical diagnostician. It is sufficient for the teacher to determine that the problem is some kind of physical or health problem. Usually, problems of health should be referred to the school nurse.

Even if a child has been diagnosed as having a chronic health problem when he enters school, he may or may not have other problems. The child should be continually evaluated along with other children in the class for other problems.

The teacher's responsibility in relation to disabling conditions is:

1. to follow the recommendations of the physician or school nurse in relation to the child's physical management;
2. to report any observable changes in the child's physical condition to the physician or school nurse;
3. to adjust the physical environment and daily routine to accommodate the child.

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CHAPTER 19

DRUG ABUSE*

The purpose of this chapter is to summarize the facts about drugs and offer suggestions on what can be done by teachers to deal with the problems of drug abuse. Additional information can be obtained by writing to the National Institute of Mental Health (NIMH). The address is listed in Chapter 1 of this Handbook. NIMH personnel can provide you with a wide range of excellent pamphlets concerning the problem.

Of growing concern throughout the United States at this time is the misuse of certain dangerous substances ranging from airplane glue to narcotics. If you are a teacher of young children you probably will not encounter the problem of drug abuse. Surveys have shown, however, that the problem is filtering downward, even into the elementary grades.

Self abuse by drugs can take many different forms. Drug abuse includes not only the use of narcotics by addicts, and LSD by so-called "hippies," but also such things as glue sniffing by teenagers and the overuse of sleeping pills or tranquilizers by nervous parents. Drug abuse can include the misuse of common medications that can be found in your own medicine chest or bought over the counter at the local drug store. It also includes the misuse of substances not commonly considered to be drugs, such as model airplane glue, paint thinner, or even nutmeg.

The problem of drug abuse arises any time drugs are used,

1. in excess;
2. habitually without a doctor's advice;
3. for a purpose other than that for which they were originally intended.

It has been estimated that as many as 20 million adults and juveniles have used marihuana at least one time. This means that about 10% of the people in the United States have tried it. Further indication of the seriousness of drug abuse is that 25% of the arrests of children under fifteen years of age last year was for the use of dangerous drugs. Sixteen percent of the people who were arrested over the age eighteen were brought in because of drug violations.

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*The CAI version of this chapter was written by Mr. Robert Sedlak.

At one time marihuana was found primarily among certain jazz musicians, ghetto dwellers, artists, and merchant seamen. Its use today, however, can be found among all levels of society and among people from all walks of life.

Drug abuse is not a new phenomenon. It has been present in the United States and other countries for years. The current problem in the United States is receiving a great deal of attention, primarily because it is centered around the youth of our nation. Sociologists, anthropologists, psychologists, and others have tried to find the causes of this epidemic. Some of the theories that have been suggested as possible causes of drug abuse are discussed in the following paragraphs.

1. Easy access to various kinds of drugs. We live in a drug using society. Drugs of all kinds are easily available to almost anyone. Many of these can be bought without a prescription at the local drug store. The parents of many young people are also frequent users of drugs such as amphetamines or barbiturates. Young people can often obtain these drugs right out of the family medicine chest.

2. The growing disenchantment of some young people with society. One popular theory which attempts to explain drug abuse is as follows: young people of today have been taught to think, question, and make decisions. They do not accept traditions easily, but instead try to start new practices. They also compare democratic principles with the actual practices of society and find inconsistencies. When they try to change or point out the inconsistencies they sometimes are unsuccessful and become discouraged. Because they can't change the society, they try to escape from it through drugs.

3. Testimonials of well-known individuals. Another theory suggests that young people respect and are easily influenced by many of the rock singers and actors of today. Some of these celebrities publically announce that they have tried drugs. They say that they have developed an awareness of their inner selves and have found peace and love while under the influence of drugs. Such testimonials may lead some of our young people to experiment with drugs.

4. Peer group pressures. The peer group of young people has a profound effect on their behavior. If a student wishes to be accepted by the peer group it means that he will probably have to participate in the activities of the group. The peer group can exert extreme pressure on an individual to conform to the group philosophies. If the individual is not strong enough to withstand this pressure, then he will give in to the demands of the group.

5. Curiosity or experimentation. Young people today are very much aware of drug usage. What they are not aware of, however, are the effects of drugs.

The information concerning the effects has been confusing and in many cases contradictory. Young people often try drugs just to see what really happens. Teachers who are informed about drugs and have the facts may be able to help the group of young people who might try drugs simply out of curiosity.

Dependency and addiction. Drug dependency is the physical or psychological need for a drug which is brought about through its periodic or continuous use. Drug dependency is a relatively new term which is being used more and more in place of the terms addiction and habituation.

Drug addiction occurs when a person's body has developed a tolerance for a drug, or a sudden stoppage of its use will produce withdrawal symptoms.

Tolerance for a drug means that increasingly larger and larger doses of the drug are required to produce the desired effect.

Withdrawal symptoms are the physical reactions of the body after the drug's effect has worn off. These symptoms vary depending on the drug being used. Examples of withdrawal symptoms are,

1. vomiting;
2. convulsions;
3. cramps;
4. sweating;
5. chills;
6. drowsiness;
7. nausea.

One of the reasons addicts continue to take drugs is to relieve the withdrawal symptoms. By maintaining a constant dosage level the drug will merely keep the addict comfortable and his reaction to the drug will be minimal. The time lapse before the appearance of withdrawal symptoms varies according to the type of drug which has been taken.

Many people believe that only drugs that fall into the narcotics category are addicting. This is not true. Some stimulants in very large doses can also be addictive; also, certain sedatives and tranquilizers can be addictive. Drug habituation is said to occur when a person continues to use a drug out of habit or emotional need.

Four Basic Categories of Drugs

Stimulants. Stimulants are a category of drugs which under normal conditions produce the following effects;

1. increased alertness;
2. reduced hunger;
3. a feeling of well being;
4. reduced fatigue.

Amphetamines are the most common stimulant drugs. They are referred to in slang terms as "uppers" and/or "pep pills" probably because they give the person a lift or pep him up. Slang terms for the various types of drugs will be mentioned throughout this section. However, the drug culture is a very transient culture and the slang terms change very rapidly. Some of the slang terms that are reported here may be out of date by the time you receive this book.

About ten billion amphetamine pills are legitimately manufactured in the United States each year. Many of these amphetamines are used as weight reducing pills because of their appetite curbing effects. Amphetamines can be taken safely for this purpose but they can be very dangerous if they are misused in trying to lose weight. Unfortunately, abuse by this means is a common occurrence.

Taking stimulant drugs to stay awake in order to drive or cram for an examination are two common misuses of stimulant drugs. Such abuse rarely causes difficulties, but it may cause problems if the misuse becomes habitual.

Psychological dependence can result from excessive use of amphetamines and there is some evidence that physical dependence may result from the excessive use of certain drugs in the stimulant category.

Abuse of amphetamines can result in the following kinds of behavior:

1. loss of appetite;
2. loss of inhibitions;
3. inability to sleep;
4. unusual talkativeness.

Other drugs which fall under the general category of stimulants include,

1. cocaine (snow);
2. benzedrine (bennies);
3. dexedrine (dexies);
4. methedrine (meth or speed).

Stimulants such as these are usually taken orally. However, they can be taken by injection. When taken by injection the effects of the drug are more intense and immediate. An overdose by injection is fatal. A colloquial name for taking the stimulant by injection is "speeding". Some people intentionally misuse the stimulant drugs. They take methedrine, benzedrine, or one of the other stimulant drugs in order to get "high". Getting high in this way is sometimes referred to as "flying". To come down again they either let the effects of the drug wear off or they will take one of the drugs in the depressant category.

If stimulants are taken in large dosages for long periods of time, the user can become drug dependent. People "hooked" on stimulants are referred to as "speed freaks." Treatment for "speed freaks" generally requires hospitalization.

Methedrine is another of the stimulant drugs. It is more powerful than amphetamines and more harmful. It can be taken by injection or sniffed. If taken in excess it can be fatal. Behaviors associated with "meth" users include unpredictable actions, violent behavior, and paranoia.

Depressants. Depressants or sedatives comprise another category of drugs. They relax the nervous system and induce sleep. Barbiturates make up the largest group of depressants. In street language these are referred to as "barbs," "goof-balls," "sleepers," and "downers." As the slang terms imply, barbiturates make the user sleepy or act in a somewhat strange manner.

In large doses, the effects of barbiturates resemble drunkenness. The person's speech becomes slurred and his ability to think, concentrate, or work is impaired. Certain people become very angry and combative after taking them. Eventually they may fall into a deep sleep.

An overdose of barbiturates can cause death. Barbiturates taken in combination with alcohol can also be deadly. Even if the amount of each, taken separately, is within the safe limits, it can still cause death because barbiturates enhance the effects of alcohol tremendously.

One possible way to recognize a barbiturate user is by the drunken behavior he exhibits but the absence of the alcoholic breath. A user of barbiturates can become "hooked" either physically or psychologically. A tolerance for the drug is built up by the body.

Other substances that produce effects similar to depressants are,

1. model airplane glue;
2. gasoline;
3. paint thinner;
4. other volatile substances similar to these.

The results of excessive "sniffing" of any of the substances listed above can result in,

1. temporary blindness;
2. coma;
3. death.

Death generally results when the individual loses consciousness and his face falls into a plastic bag that is used to hold the substance. Suffocation is the end result. Substances contained in airplane glue can also cause permanent physical damage to the liver.

Hallucinogens. Hallucinogens is the third category of drugs. This category includes any of several drugs popularly called psychedelics. These drugs provoke changes of sensation of time, color, space, and sound. Distortions of these occur and produce hallucinations and delusions.

Some commonly known drugs that are listed under hallucinogens are

1. marihuana;
2. peyote;
3. LSD;
4. DMT;
5. STP.

Peyote, STP, and DMT, are less well known and less widely used than marihuana and LSD. Peyote is a plant that grows in the southwestern United States and is used by the Native American Church as part of their religious ceremonies. DMT and STP are both synthetic drugs like LSD. The use of Peyote by the Native American Church probably would not be considered drug abuse. The Indians who practice this religion feel that they experience truly sacred visions while under its influence. Those people who take the drug merely for its hallucinatory effects are the abusers.

The hallucinations or delusions that a user experiences while under the influence of one of the hallucinogenic drugs is called a "trip". If the effects of the drug are favorable, it is referred to as a "good trip". If the effects of the drug are unfavorable, or result in an unpleasurable experience, it is referred to as a "bad trip" or "bummer".

Marihuana, or "pot", is found in the female Indian hemp plant, cannabis sativa. It grows in mild climates around the world including the United States.

A substance known as tetrahydracanna binal (THC), which is found in the hemp plant, is believed to produce the mind altering effects of the drug. Marihuana plants which grow wild in the United States are relatively low in THC; however, cultivated plants or plants from abroad have a higher THC content.

Marihuana is usually smoked in cigarettes or pipes, but it can also be added to food or drink. The smoke of marihuana smells like burnt rope or dried grass mingled with a sweetish odor. Colloquial names for marihuana cigarettes are "reefers", "sticks", or "joints".

Some people believe that everyone who tries marihuana eventually tries and becomes addicted to stronger drugs. Most marihuana users do not usually progress to stronger drugs. However, there is evidence that heavy users tend to experiment with other drugs.

DRUG CATEGORY	TRADE NAME OR CHEMICAL NAME	HOW TAKEN	PHYSICAL DEPENDENCE	PSYCHOLOGICAL DEPENDENCE	TOLERANCE	GENERAL REACTIONS
Stimulants	Amphetamine	Swallowed	No	Yes	Yes	restlessness, talkativeness excitability, profuse perspiration, increased energy, reduced fatigue followed by depression
	Benzedrine	Swallowed	No?	Yes	Yes	
	Cocaine	Injected,Sniffed Swallowed	No	Yes	No	
	Dexedrine	Swallowed	No	Yes	Yes	
	Methedrine	Injected,Sniffed	Yes?	Yes	Yes	
Depressants	Barbiturates	Injected,Swallowed	Yes	Yes	Yes	slurred speech, laughs or cries easily, staggering gait, intoxicated behavior
	Volatile Substances similar to glue or paint thinner	Sniffed	Unknown	Yes	Yes	loss of balance, black-outs, blurred vision, slurred speech, intoxicated behavior
Hallucinogens	DMT	Injected	No	No?	Yes	visual, auditory, and tactile distortions, psychotic behavior, excitation, rambling speech
	LSD	Swallowed	No	Yes?	Yes	
	Peyote	Swallowed	No	Yes?	Yes	
	STP	Injected	No	Yes?	Yes	
	Hashish	Sniffed,Smoked Swallowed	No	No?	No	variable - euphoria, dreaming, hallucinations, depression, no reaction
	Marihuana	Sniffed,Smoked	No	No?	No	
Narcotics	Codeine	Swallowed	Yes	Yes	Yes	drowsiness, sleep, euphoria, reduced sex drive, dream-like state, prevention of withdrawal symptoms
	Heroin	Injected	Yes	Yes	Yes	
	Morphine	Injected,Swallowed	Yes	Yes	Yes	
	Opium	Injected	Yes	Yes	Yes	

Question mark indicates conflicting evidence.

Plate 19.1

The most common drug that heavy users of marihuana progress to is hashish. Hashish also comes from the plant cannabis sativa, but it is much higher in THC content. It is about five to ten times stronger than marihuana.

Users' reactions to marihuana range from depression to a feeling of excitement and pleasure. In some users there is no noticeable change at all in their behavior.

Some of the factors that affect a person's emotional and sensory reactions to marihuana are,

1. the amount and strength of the drug; and
2. the emotional set of the individual and the setting.

The emotional set of a person refers to the state of mind the person is in when he takes takes the drug. The "setting" refers to his social or physical surroundings. A different type of reaction will occur if he is in a group setting than when he is by himself.

While under the influence of drugs a person's sense of time and distance frequently becomes distorted. A user's reflexes and ability to think clearly are also affected. Although empirical evidence is still incomplete, it is suspected that long-term use of marihuana by young people may have a deleterious affect on their personality growth and development.

Another widely known hallucinogenic drug is lysergic acid diethylamide or LSD. LSD is a man-made chemical first developed in 1938. Some slang names for this drug are, "acid", "sugar", "trips", "big D", "cubes", and "25". An average dosage of 1/300,000 is powerful enough to produce an eight to ten hour "trip". LSD is commonly taken in a sugar cube, cracker, or cookie.

Physical changes which occur after the drug has been taken are an increase in heart rate, blood pressure, and temperature. The face becomes flushed and goose bumps appear on the extremities. Some examples of physical distortions which a person on a "trip" experiences are,

1. familiar objects may seem unusually beautiful;
2. flat objects may appear three-dimensional;
3. music may appear to have color, and
4. color may seem to possess taste.

While under the influence of LSD a person may physically harm himself or place himself in a potentially dangerous situation. There have been reports of users who thought they could fly by jumping out of windows. Suicides have resulted from the use of LSD.

LSD does not cause physical dependence; however, there is evidence that psychological dependence may develop. There is some evidence that chromosomal changes may occur in the user and possibly a chromosomal change in any off-spring.

Although physical dependency is not known to result from LSD, a reaction known as a "flashback" does occur. What this means is that a person who has taken LSD, even if only once, is susceptible to reoccurring, unannounced "trips," months and even years after the drug has stopped being taken.

Some things to remember about LSD are:

1. a very small amount can send you on a "trip;"
2. psychological dependence may result from its use;
3. physical dependence does not occur;
4. chromosomal changes are a possible danger;
5. may cause severe mental disorders or personality changes;
6. flashbacks occur without warning.

Narcotics. Narcotics makes up the fourth major category of drugs. This category includes opium and the various opium derivatives such as codeine, morphine, and heroin. Synthetic drugs which produce a morphine-like effect are also classified as narcotics. The primary use of narcotics is to relieve pain.

Since the end of World War II the problem of narcotics abuse has steadily grown. By the end of 1968 there were 64,011 known narcotic addicts in the United States. Estimates put the actual number of addicts somewhere closer to 200,000.

About 90% of the narcotic dependent people in the United States are on heroin. Its use in the United States is forbidden even for medical purposes.

Heroin, commonly known as "smack," "Horse," or "junk" is most usually taken by injection. For this reason a user can often be identified by "needle tracks" (small needle marks) on his arms or legs.

Because heroin reduces hunger, many narcotic dependent persons suffer from malnutrition. They also frequently suffer from skin abscesses caused by using unsterilized needles. Increasingly larger doses of heroin are required in order to avoid withdrawl symptoms. Overdoses of heroin are almost always fatal.

Withdrawal symptoms from heroin will appear about 12 to 16 hours after the last injection. Withdrawal sickness includes the following symptoms:

1. sweating;
2. shaking;
3. chills;
4. diarrhea;
5. nausea;
6. abdominal cramps.

Federal Drug Control Legislation

The most recent major federal control legislation which deals with the control and possession of various types of drugs was passed October 27, 1970 by the 91st Congress. Public Law 91-513 contains the specifics on penalties and regulations on dangerous drugs. Under the new law, drugs have been divided into five categories called "Schedules." Inclusion of a drug into one of the five schedules is based upon its potential for abuse, medical use, and potential for physical and/or psychological dependence.

The criteria for determining the inclusion of a drug into Schedule I are that the drug has a high potential for abuse, has no accepted medical use in the United States, and that the drug is dangerous to use even under medical supervision. Among the substances which fall under this schedule are heroin, LSD, marihuana, peyote, and various opium derivatives.

Inclusion in Schedule II is based on the high potential for abuse, an accepted medical use in the United States even if highly restricted, and the possibility that abuse may lead to severe psychological or physical dependence. Among the substances included in Schedule II are opium, opium poppy, poppy straw, and methadone.

Schedule III includes drugs which have less of a potential for abuse than those in Schedules I and II. Drugs under this schedule have a current medical use in the United States. The abuse of drugs in this schedule may lead to low or moderate physical dependence or high psychological dependence. Amphetamines or drugs containing methamphetamine (methedrine) and drugs containing small amounts of codeine, morphine, and opium are included in Schedule III.

Drugs included in Schedule IV have a lower potential for abuse than those in the previous schedule. Their abuse may lead to a more limited physical or psychological dependence than those in Schedule III. These drugs are currently used in the United States for medicinal purposes. None of the drugs we discussed are contained in Schedule IV; however, two which you might be familiar with are barbital and phenobarbital.

The criteria for placing drugs in Schedule V are primarily the same as those given for Schedule IV except that the effects of these drugs are less severe.

One of the highlights of the new law is a reduction in the penalty for illegal possession of dangerous drugs for first offenders. Many of the drugs contained in the above schedules can be legally used if prescribed by a doctor. The maximum penalty for the illegal possession of a dangerous drug is a fine of not more than $5,000 and/or a prison term of not more than 1 year for the first offense. The penalty for a second offense is a maximum prison term of 2 years and/or a fine of not more than $10,000.

If a person has not previously been convicted of violating the previously-mentioned drug law and is found guilty or pleads guilty "the court may, without entering a judgment of guilty and with the consent of such person, defer further proceedings and place him on probation" for a period of not more than 1 year. A nonpublic record of such a finding will be retained by the Department of Justice.

If the offender was not over 21 years of age and had been placed on probation as described previously, he may have removed from his official record any information on his arrest, indictment, trial, finding of guilt, etc. by petitioning the court. If such a petition is granted by the court the official record of the offender will be completely cleared. The nonpublic record of the offense however, will be retained by the Department of Justice. The advantage to having the official record cleared is that the person need not acknowledge ever having been arrested or tried on a drug charge, even if placed under oath.

The penalties for offenses other than for simple possession are much more severe. If you desire to know more about the penalties for offenses other than for possession, the U. S. Public Laws should be consulted. Public Libraries may have copies of the laws for reference purposes. The specific law to consult is Public Law 91-513.

Suggestions for Teachers

Teachers or other adults who are in close contact with young people should be well informed about the drug abuse problem. If a drug abuse problem arises, physicians and other authorities suggest the following approaches.

1. Stay calm. Approach the problem of drug abuse on a level-headed fashion, the same way you approach other forms of undesirable behavior. If you suspect drug abuse by students, discuss the problem with another professional person. If the problem is severe, referral to a physician should be made. By all means do not tell everyone of your suspicions. Mentioning the word "drugs" to some people is like shouting "Fire!" in a crowded theatre.

2. Keep the channels for communication open. Try not to preach to young people about drugs. They probably will just "turn you off." There are good convincing arguments which can be used without becoming moralistic.

3. Don't use "scare" techniques - Using sensational accounts to discourage drug abuse does not seem to be extremely effective. However, using factual information can get results. For this reason the classroom teacher should be prepared to answer questions honestly and accurately.

4. Avoid making judgments concerning drug use merely by a person's physical appearance. Drug users come in all shapes and sizes. They may wear their hair long or short. They may wear beads or neck ties. Look at the behaviors, not just the clothes or hair.

5. Have factual drug information available for interested students. A great deal of information concerning the problems of drug abuse is readily available from the National Institute of Mental Health. Some of the pamphlets are designed for young people.

Some behaviors that may be signs of serious drug problems are,

1. loss of interest in school;
2. loss of interest in social relationships with others;
3. deterioration of physical appearance; and
4. development of problems in school or with parents.

We hope that this will not be the end of your education on drugs but merely the beginning. We strongly urge you to learn all that you can about the growing problem of drug abuse.

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CHAPTER 20

LEARNING DISABILITY*

This chapter will deal with a very complex problem that has come to be known as "learning disability". The problem manifests itself in many different ways. Learning disability is usually considered to be a problem of information processing, storage, or retrieval, but problems of input sometimes overlap information processing problems, so the distinction is not always clear. The definition that we will use for learning disabilities is shown on Plate 20.1.

Perception

Perception is the process of classifying and storing information received through the input channels. Perception is carried out in the brain. The act of receiving information using eyes or ears is called sensing. The eyes and ears sense information but do not interpret it. For our purposes perception and interpretation can be regarded as synonymous terms.

Perception refers to classifying, categorizing, and storing visual or auditory information. In order to classify and categorize, one must be able to identify the differences between objects. Another word for identifying the differences between objects is discrimination. Psychologists often refer to classifying and categorizing information as perceptual discrimination.

The process of storing sensory information is referred to as perceptual memory. Both perceptual discrimination and perceptual memory can deal with auditory and visual stimuli.

Receptive language is the ability to receive and understand language. Usually we receive language through our eyes and ears. The eyes and ears receive information and pass it to the brain. Receptive language ability is the reception and meaningful interpretation of language.

Expressive language is the expression or production of meaningful language. Language is expressed through the output channels. Expressive language is the

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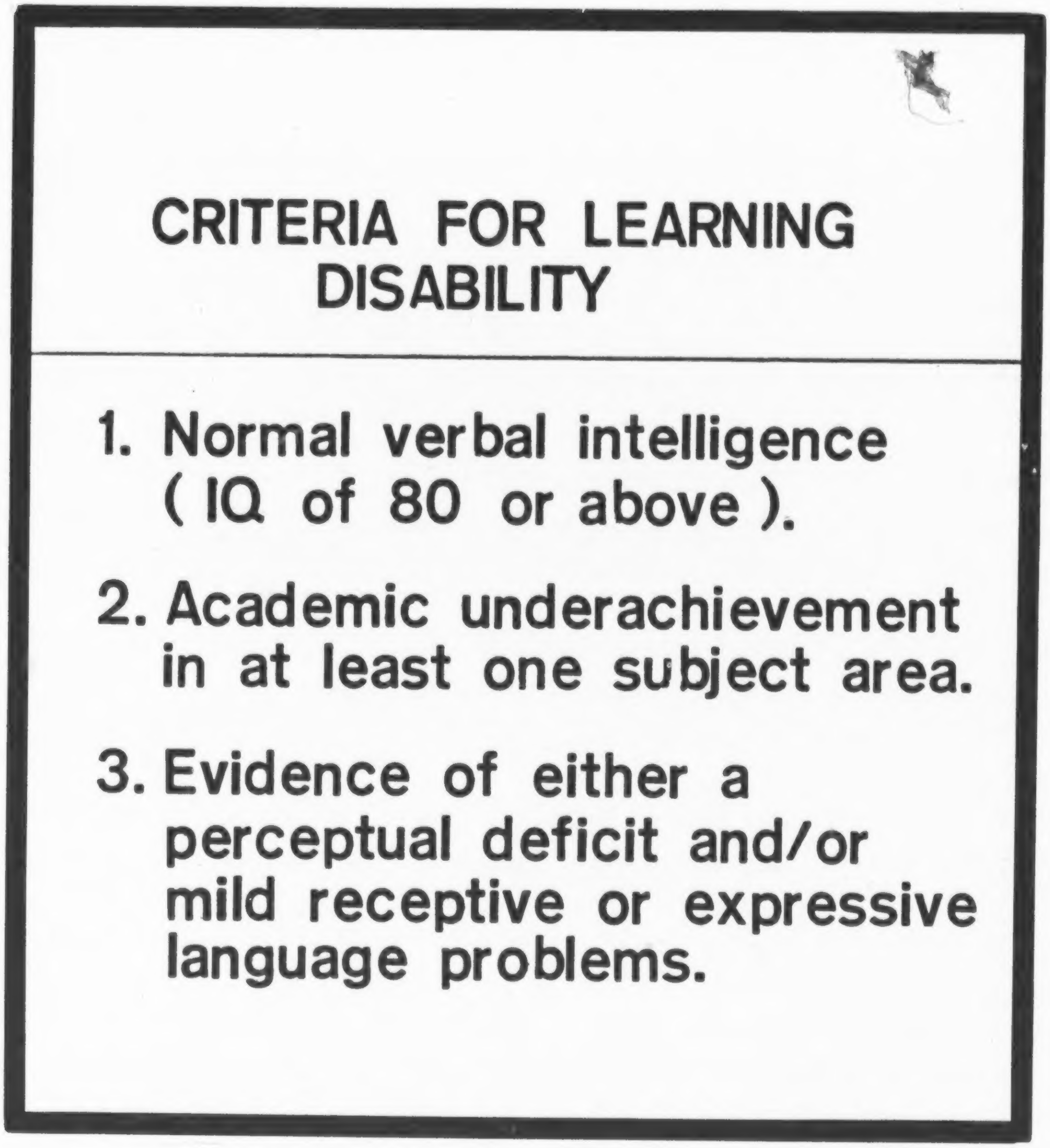
*The CAI version of this chapter was written by Professor David Sabatino and revised by Mr. Judson McCune and Professor G. Phillip Cartwright.



CRITERIA FOR LEARNING DISABILITY

1. Normal verbal intelligence (IQ of 80 or above).
2. Academic underachievement in at least one subject area.
3. Evidence of either a perceptual deficit and/or mild receptive or expressive language problems.

Plate 20.1

means by which a person expresses himself. Expressive language can be nonverbal as well as vocal. A person can communicate through motor acts of various kinds. Some communicative motor acts would be waving good-by, nodding the head, smiling, frowning, etc.

A learning disability is suspected when a child has a visual or auditory perceptual problem or an expressive or receptive language problem. Visual or auditory perceptual problems can be problems in perceptual discrimination or perceptual memory.

Perceptual Problems

A child may have one of four common types of perceptual problems. The four combinations are problems related to, 1) visual discrimination, 2) visual memory, 3) auditory discrimination, and 4) auditory memory.

The classification of perceptual problems as auditory or visual refers to the sensory channel through which the stimulation comes.

Visual perceptual discrimination is the ability to distinguish the sizes, shapes, etc., of symbols and letters.

Auditory perceptual discrimination is the ability to differentiate among sounds.

Visual perceptual memory is the ability to retain or recall visual imagery such as shapes of letters and words.

Auditory perceptual memory is the ability to remember or retain sounds and combinations of sounds.

When letter forms or word forms are interpreted incorrectly, a visual problem may exist. An example of a visual perceptual problem is letter or number reversal. Plate 20.2 illustrates reversals. In these cases. the child was asked to reproduce figures. Since the child perceived the figures as being reversed, that is the way he wrote them down. A severe visual perceptual problem is illustrated by mirror writing. It is easy to see that perceptual problems frequently are associated with learning problems.

The inability to retain sounds, alone or in combination, is referred to as an auditory perceptual memory problem. The inability to recognize the differences between letters or words is called an auditory perceptual discrimination problem.

The emphasis in the preceding paragraphs has been on perception. In general, a child with a learning disability has a perceptual problem and not a

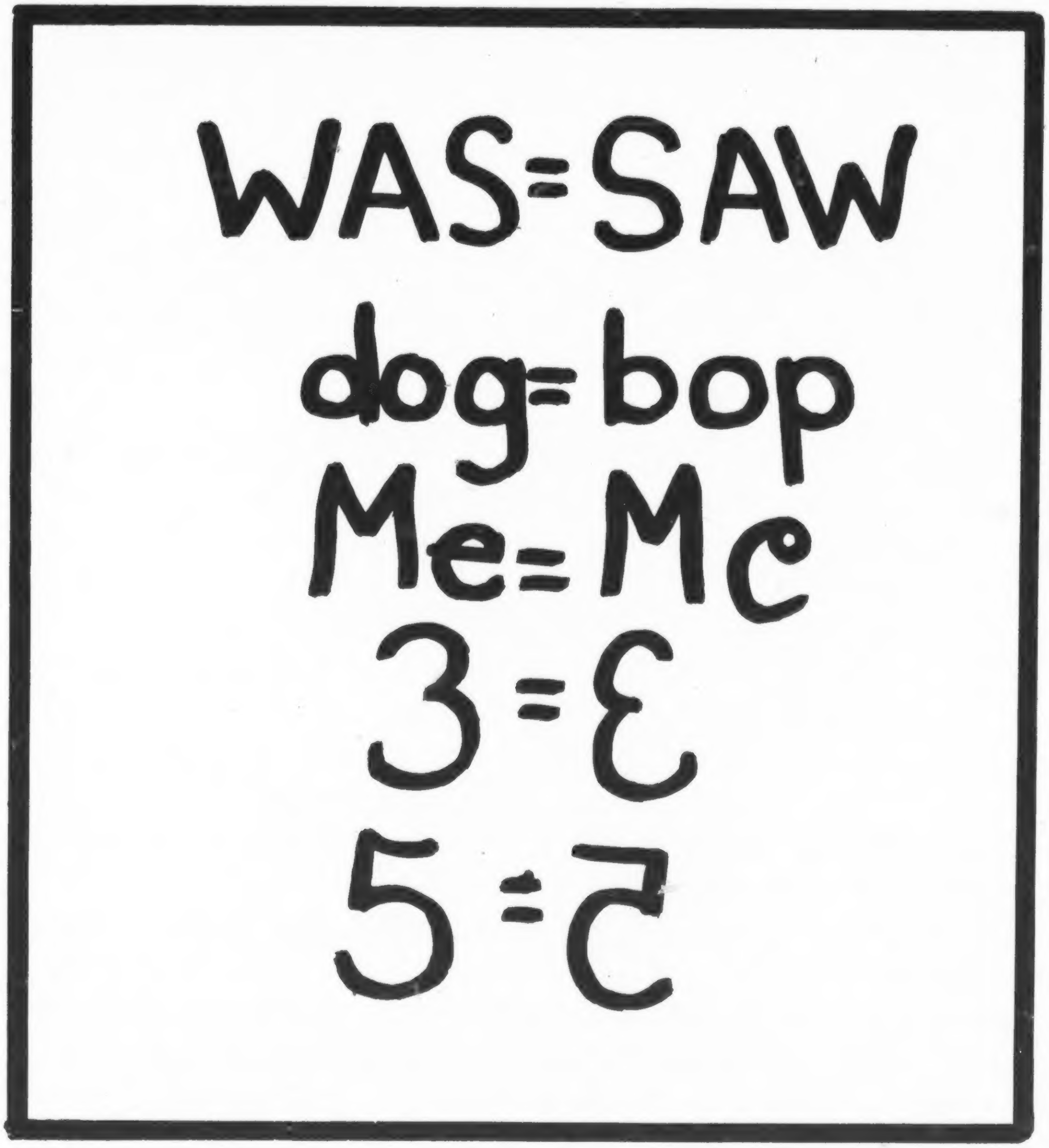

WAS=SAW
dog=bop
Me=Mc
3=Ɛ
5=5

Plate 20.2

problem of low intelligence or a problem of defective vision or hearing. The problem of learning disabled children is not with the reception of stimuli through the sensory organs, but with the perception of the stimuli. In general, children who have learning disabilities have minimal impairments in their speech and motor behaviors. Children with learning disabilities have normal intelligence and normal sensory reception but have auditory and visual perceptual problems.

Characteristics of Learning Disabled Children

1. Reversals in reading and writing
2. Poor printing or writing
3. Word by word reading
4. Inability to keep place during reading
5. Frequent mispronunciation of beginnings or endings of words
6. Inability to comprehend differences between speech sounds
7. Short attention span and distractability

If a child consistently displays some of the preceding behaviors, he should be referred to a school psychologist for further evaluation.

There is considerable controversy among educators and psychologists regarding the term "learning disability", and there is not widespread agreement on the definition of the term. For purposes of this chapter we will use one of the more common definitions. The child is said to have a learning disability if he shows evidence of satisfying the following three criteria:

1. normal verbal intelligence; i.e., an IQ of 80 or above;
2. academic underachievement in at least one subject area;
3. perceptual deficit and/or mild receptive or expressive language problems.

The inability to accurately interpret visual form is referred to as visual perceptual discrimination error. Psychologists and diagnostic teachers measure visual perceptual discrimination errors with tests such as the Bender Visual Motor Gestalt Test.

Letter recognition depends upon visual perceptual discrimination. Once letters are recognized, they must be retained for later use. Retention, or memory, is another visual and auditory perceptual function which provides the learner with the ability to retain letters for later use.

The ability to distinguish and discriminate the differences between sounds is called auditory perceptual discrimination. The perceptual ability to retain sounds alone or in combination is called auditory perceptual memory.

The speech and motor responses of the learning disabled child are generally free of gross defects. Slight articulation errors in the production of speech and slight problems in eye hand coordination are frequently seen. Occasionally, awkwardness in gross motor development, such as walking or running, can be seen.

A child with auditory perceptual impairment lacks the ability to discriminate between different speech sounds. Children with auditory perceptual problems often seem to be easily distracted by irrelevant background noises, especially unexpected or irregularly occurring sounds. For example, the occasional squeak of a chair may be more distracting than the regular whir of a heating or air conditioning unit.

Expected and Actual Grade Achievement

When a child takes a standard achievement test, his score is usually reported in the form of a grade level equivalent. Grade level equivalent is abbreviated as GLE and is reported as numbers such as 2.3, 4.6, 5.2, etc. A GLE of 2.3 means that the child is doing about as well as the average second grader during the third month of school. GLE scores are much more complex than the preceding implies. GLE scores are covered in detail later in the handbook.

Predicted grade equivalent (PGE) is the point or grade level at which a child should be achieving on the basis of his IQ and chronological age. Plate 20.3 is a useful chart for estimating PGE on the basis of IQ and chronological age. An average second grader during the third month of school has a predicted grade equivalent of 2.3. If a child's actual grade level equivalent is considerably below his predicted grade equivalent, then this discrepancy should be noted. Such a discrepancy is one of the three criteria used for the definition of learning disability. Notice that a retarded child or a child with an IQ considerably below average will have a predicted grade equivalent which is considerably less than a normal child of the same chronological age.

Plate 20.4 is an example of an intra-subject comparison of a child's performance on auditory tasks and visual tasks. The thin vertical line intersecting the "number 10" represents the child's chronological age. The child has normal

Potential Academic Achievement of Children with Various Intelligence Quotient Levels

CA	Slow Learning Range			Slow Average Range			Av. or Above
	60	70	75	80	85	90	100
6	Pre–k	K	K	K	K	K	K&1
7	K	K	K	K	K	K&1	1&2
8	K	K	K&1	K&1	1	1&2	2&3
9	K	K&1	1	1&2	2	2&3	3&4
10	K&1	1&2	2	2&3	2&3	3&4	4&5
11	1	2	2&3	3	3&4	4	5&6
12	1&2	2&3	3&4	4	4&5	5	6&7
13	2	3&4	4	4&5	5&6	6	7&8
14	2&3	4	5	5&6	6	7	8&9
15	3&4	5	5&6	6&7	7	8	9&10
16	4	5&6	6	7	8	9	10

Plate 20.3

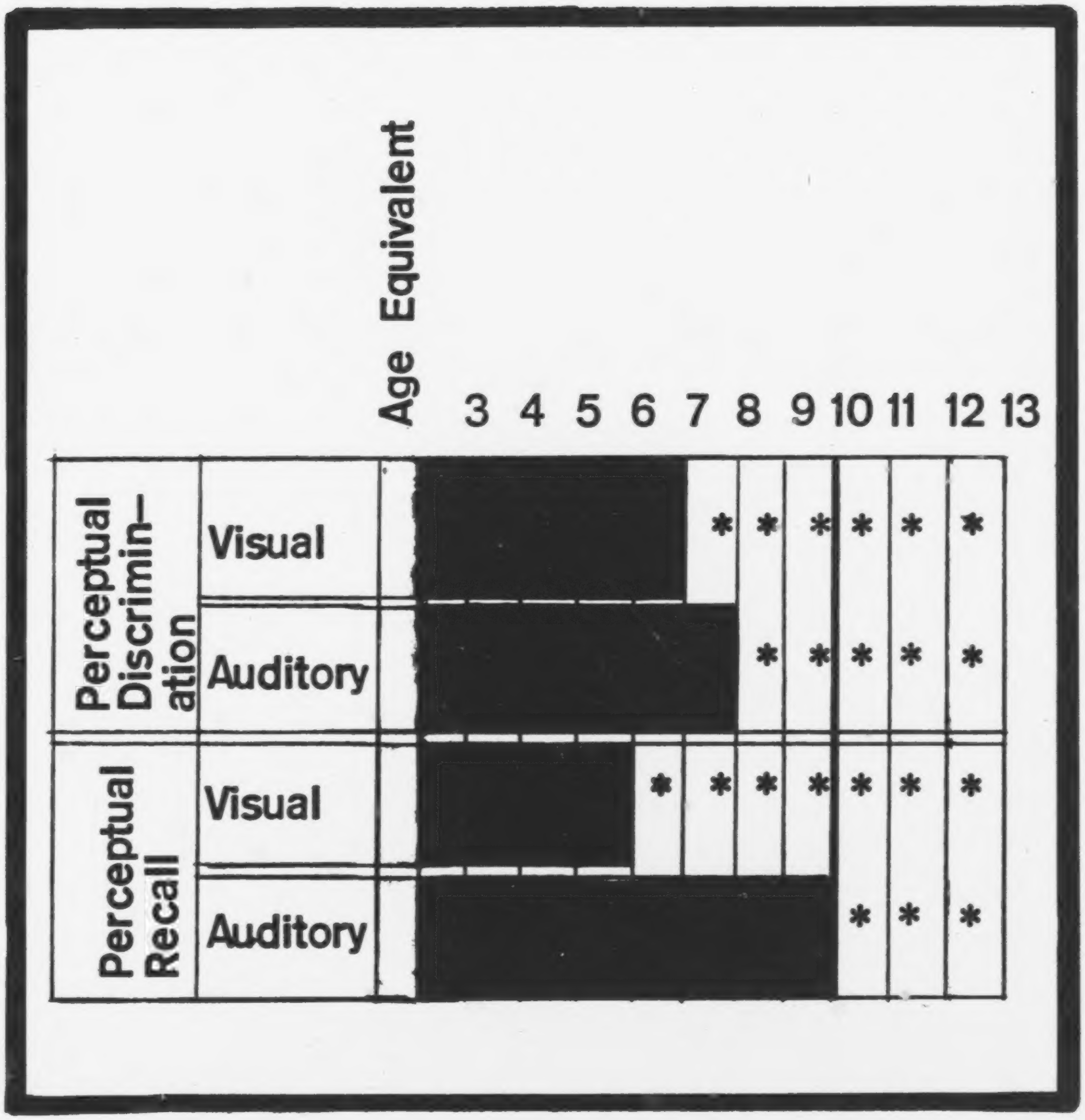

Age Equivalent
3 4 5 6 7 8 9 10 11 12 13
Perceptual Discrimin–ation
Visual
Auditory
Perceptual Recall
Visual
Auditory
* * * * * *
* * * * *
* * * * * * *
* * *

Plate 20.4

intelligence so his predicted grade equivalent should by equal to that of a ten year old child. The child's actual age equivalent scores are indicated by the solid blocks. The child has an age equivalent of seven years in visual discrimination, an age equivalent of eight years in auditory discrimination, age equivalent of six years in visual recall, and an age equivalent of ten years in his auditory recall. This profile indicates a considerable difference between the child's auditory and visual abilities in perceptual recall. It also indicates that the child is considerably below average in both visual and auditory perceptual discrimination.

You may not have access to a profile such as the one shown in Plate 20.4 but you can watch a child's style of learning to ascertain whether he prefers visual or auditory information. You can determine his perceptual ability by having him recognize sounds and letters. His ability to retain either sounds or letters informs you about his auditory perceptual memory. Simple tests can be devised to estimate a child's ability in each of the four areas represented in the profile.

The child who comes to school with a visual perceptual inpairment, but with good auditory discrimination ability is not necessarily going to become learning disabled. A great deal depends upon the ability of the teacher to recognize early in his school career that he can profit from phonics, but makes little progress when exposed to a sight reading approach.

Expressive/Receptive Language

Language is the device by which perceptual symbols are received and expressed as concepts. Learning to read is heavily dependent upon the reception and expression of these concepts. Success in reading is dependent upon the ability to form language concepts and to associate sounds and letters in various configurations. The discussion of language focuses on receptive and expressive language functions and not on central language conceptualization. Central language is the ability to form language concepts and is highly related to intellectual ability. Central language problems are beyond the scope of this course. Classification of language problems as receptive, central, or expressive problems is not an easy task. Specialists often cannot agree on a firm diagnosis of a child's language problem.

Central language ability seems to be highly related to overall intellectual ability. A child with a gross central language impairment is frequently thought to be deaf, mentally retarded, emotionally disturbed, or culturally deprived.

The child with a receptive language impairment could easily be mistaken for a dull normal or hard-of-hearing child. He may appear to be indifferent or uncooperative. Some of the behaviors that are often associated with the receptive language impairments are:

1. words often pronounced right in isolation, but incorrectly in sentences;
2. words run together;
3. unusual vocal rhythms or volume;
4. poor or inadequate use of modifiers, verbs tenses, or prepositions.

Some of the behaviors that are often associated with the expressive language impairments are:

1. speech problems; (covered in Chapter 16)
2. emphasis on gestural, rather than vocal expression;
3. poor oral reading ability, but good comprehension of what is read.

There are not too many obvious differences between the behavior shown by children with receptive language problems and the behavior shown by children with expressive language problems, since both problems can be observed only by study of the expressive language. Most children do not have clear-cut receptive or expressive language impairments. They have some of each, and frequently additional auditory perceptual impairment as well.

In many ways, language can be classified in a manner that is similar to the Information Processing Model. Receptive language is analogous to input - the input units receive incoming language information. The input units pass the language information along to the brain where interpretation, storage, retrieval, and other processing takes place. Vocal and motor units are conveyors of language. They are the means by which language is expressed.

Outputs, you will recall, are observable behaviors. Similarly, expressive language can be seen or heard. Judgments about the receptive or central language must be based on observation of outputs of expressive language. The presence of receptive or central language problems can only be inferred, whereas expressive language problems can actually be observed.

This concludes the chapter on learning disability. If you feel that you do not have a firm grasp on all the concepts presented, do not worry too much about it. The ideas underlying the concept of learning disabilities are still being studied. There is very little agreement among authorities in the field. We have presented one point of view that is probably the most acceptable to authorities. We caution, though, that the field is in flux - every day new theories and ideas are presented. It is possible that new data will one day refute some of the ideas presented in this chapter. In the meantime, however, you will be able to help children best if you concentrate on the observed behavior - the expressive language - of children with suspected learning problems.

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CHAPTER 21

DOCUMENTATION AND REFERRAL PROCEDURES*

Information in this chapter is directed to the time when the teacher has decided that he has been able to collect adequate information and is now ready to make a decision about the child. The teacher decides one of two things:
1) the child needs to be referred to a specialist for further diagnosis; or
2) the child has a problem which is of such a nature that it can be handled by the classroom teacher within the classroom setting.

The Teacher Referral Statement

If the teacher decides that the child should be referred for more intensive study, then the teacher should collect all information which has been gathered up to that point about the child and should forward that information to the diagnostician. In order to document the need for referral and collate data collected, the teacher usually fills out a set of referral forms. The set of referral forms which is being used in this course has been labeled _The Teacher Referral Statement_. School districts may have developed a set of referral forms similar to this _Teacher Referral Statement_ or a school district may have adopted a set of referral forms which have been developed by someone else. A complete copy of _The Teacher Referral Statement_ can be found at the end of this chapter of the handbook.

In addition to providing a means of documenting the need for referral and collating information about the child up to the time of referral, a set of referral forms can be put to other uses. One other procedure is to use the referral forms as a check on the adequacy of information obtained about a child. As a teacher goes about the task of completing the forms, he may find he lacks the information needed to answer questions, make a rating, and so on. He may find his information is _not adequate_, and he may have to continue to collect information about the child before he eventually completes the referral forms. In this way, using a set of referral forms helps the teacher to check on the adequacy of the information already obtained about a child and provide guidelines about what specific additional information is needed. Another use of the referral form is to use it as a set of guidelines in planning and implementing modifications in a child's educational program. A teacher may reach the decision that the child does not need to be referred for intensive diagnosis. In this case, it is the teacher's responsibility to use the information gathered about the child as a starting point for planning modifications which will be instituted in the child's educational program.

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*The CAI version of this chapter was written by Professor Carol A. Cartwright.

Several points related to the Teacher Referral Statement are noteworthy. Usually, children with problems are described in terms of those problems. There is a tendency to concentrate on what the child is unable to do. The Teacher Referral Statement is constructed so that the teacher describes the child in terms of what he is able to do. The focus is on describing the conditions under which the child can perform, rather than on what the child's difficulties are. Vague statements about possible causes of problems are not a part of the form since these vague statements do not convey specific information either to a diagnostician or to a teacher who is planning educational modifications.

Behavior Modification Techniques

Knowledge of behavior modification techniques should be an asset to teachers as they deal with the daily behaviors of children. Behavior modification techniques are applicable to learning and management behaviors. Teachers are constantly manipulating children's behaviors even though they may not be aware of this manipulation. If teachers are aware of the principles of behavior modification, they can deliberately influence children's behavior systematically and efficiently, rather than allowing the influence to occur haphazardly.

Rewards

An event which influences behavior in a positive way is a reward. The event (whatever it may be) cannot be termed a reward until the subsequent effect of that event on the behavior which preceded it is determined. The following is the sequence of occurrences which describes the process of reinforcement:

1. a behavior occurs spontaneously and an event (or consequence) follows the behavior;
2. if the consequence is pleasant or meaningful, the consequence will tend to have a positive influence on the behavior; and
3. the behavior will tend to occur with greater frequency.

Plate 21.1 is a representation of these steps in the reinforcement process. An example of the sequence is shown in Plate 21.2 for the behavior of wearing a new hat.

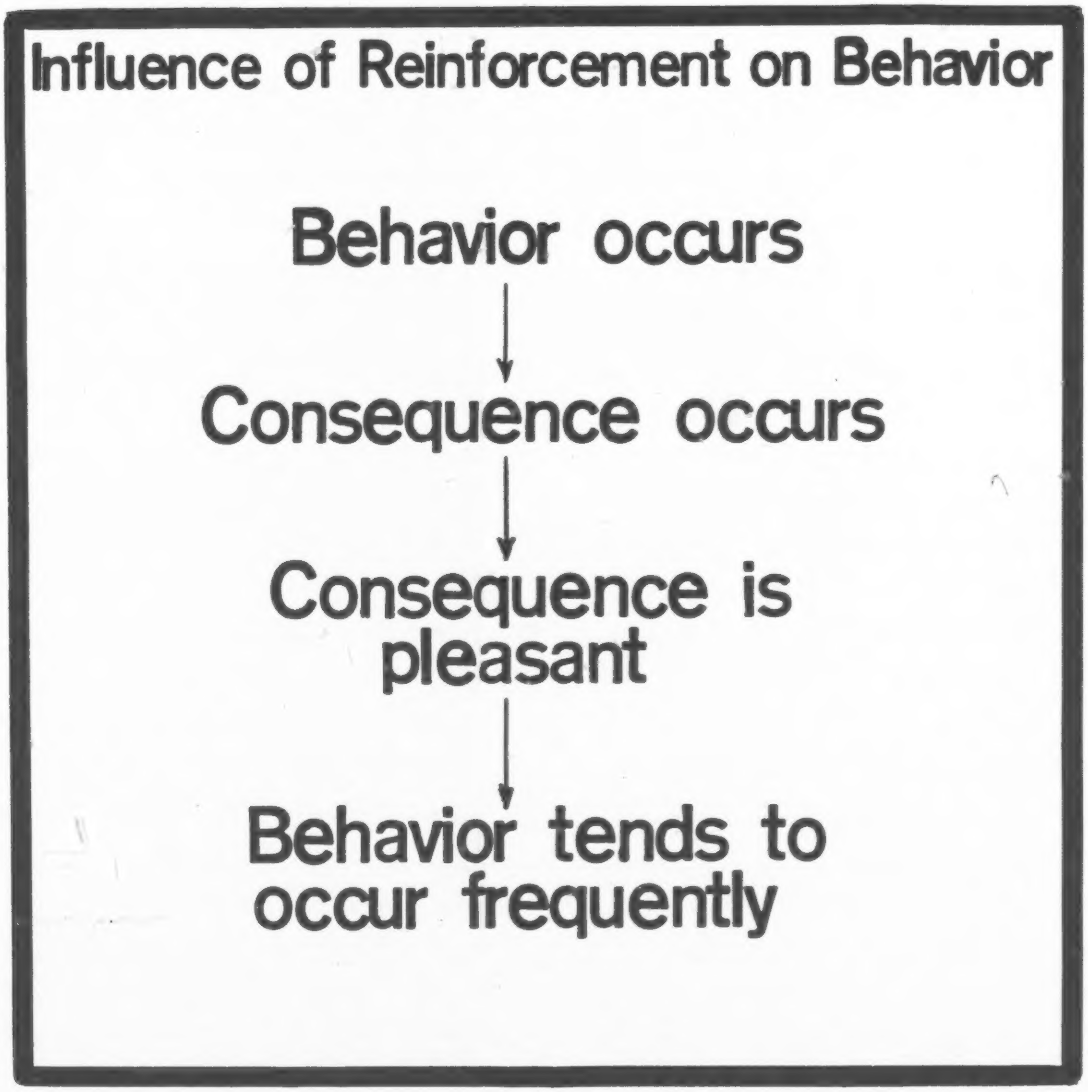
It should be noted that the behavior tends to occur more often, or become stronger, if the consequence (the event following the behavior) is one which is satisfying to the individual. Thereafter, when the behavior tends to occur more often, the consequence is termed a reward. There are, of course, many possible consequences or events which can follow behavior. It is not possible to state that a particular consequence is functioning as a reward until the subsequent effect on the behavior is observed. Synonymous terms for reward are "reinforcer", and "reinforcing conditions."

Determining Reward Preferences

It may surprise some individuals to learn that there are considerable differences among people in their preferences for rewards. A comment of approval such as, "That's good work.", may be rewarding for some children and not for others. Some children like to receive something tangible such as candy, while others find it demeaning to be given candy. There is a problem in that many people assume that children will be equally motivated by the same reward. Teachers often administer an event which they think is a reward to children and never stop to consider the influence of this event on the behavior.

Remember these points regarding preferences for rewards. If an event is not satisfying for a child it probably will not influence behavior in a positive way. Do not assume that the same event will be equally rewarding for all children. It is necessary to analyze the interaction between the consequence and the behavior in order to check if the consequence is functioning as a reward for a particular child. Just as individualization of instruction enhances learning, so does individualization of rewards enhance learning.

There are several ways of determining which events are rewarding for a particular child. The child's behavior can be observed and situations can be analyzed in an attempt to discover the reinforcing conditions. For example, a



Influence of Reinforcement on Behavior

Behavior occurs

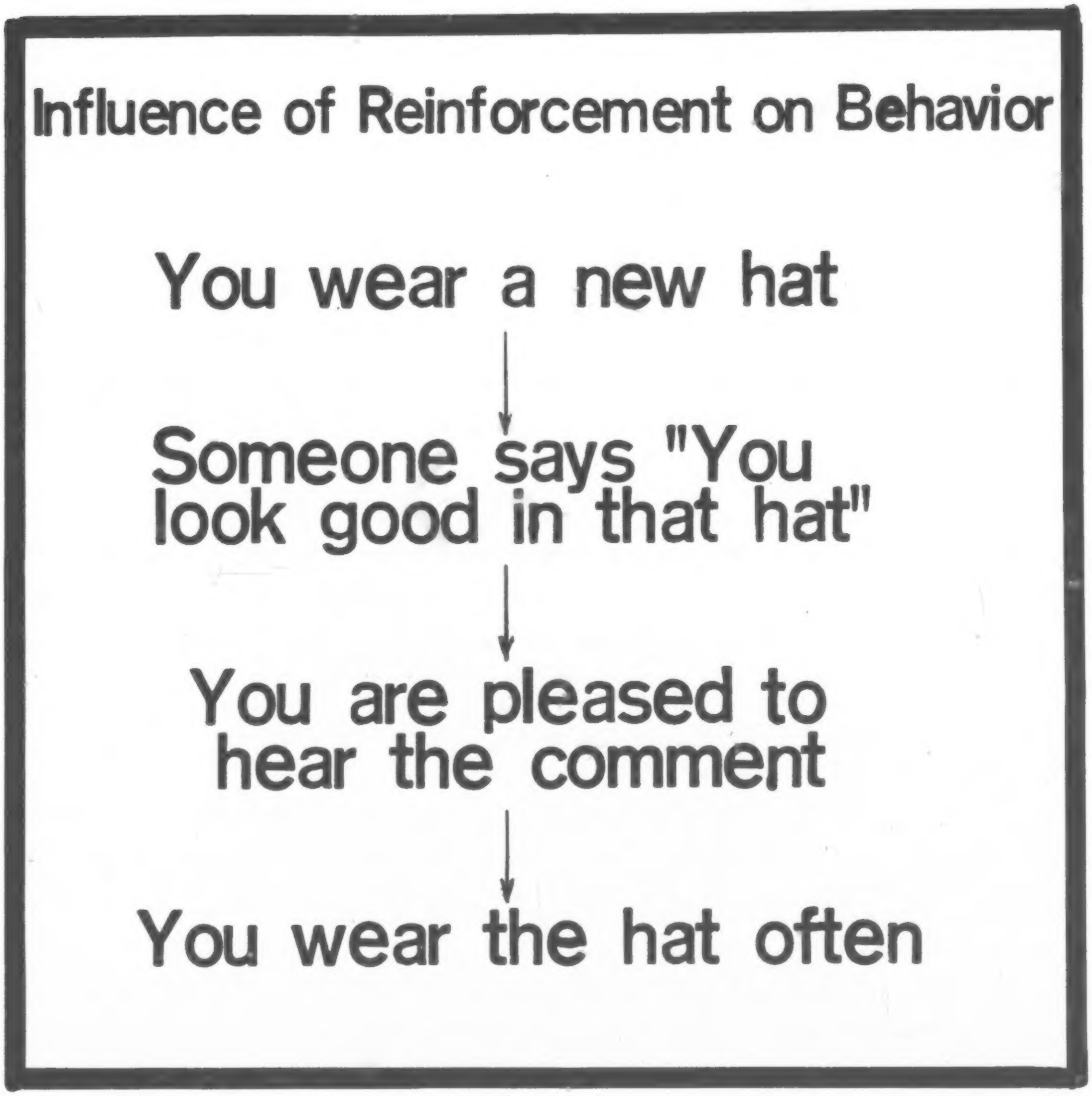
Consequence occurs

Consequence is pleasant

Behavior tends to occur frequently

Plate 21.1

teacher may have set up an arrangement in his classroom whereby children are able to choose an activity upon completion of an assignment. The teacher might observe that a child's typical behavior is to work diligently and then to choose to listen to records. The same teacher might observe that another child's typical behavior is to dawdle and not finish assignments. This teacher, upon analyzing the situation, will probably come to the conclusion that the possibility of choosing an activity is rewarding for the first child but not for the second.



Influence of Reinforcement on Behavior

You wear a new hat

Someone says "You look good in that hat"

You are pleased to hear the comment

You wear the hat often

Plate 21.2

Another way of determining a child's reward preferences is to experiment. Several different events would be tried out with a child to see what effect the various events have upon the child's behavior. The second child in the previous example who was dawdling and not completing assignments might serve as an example at this point. The teacher could try comments of approval or symbolic rewards such as stars or stickers, and observe the influence of these events on the child's behavior. The teacher could also set out an array of prizes such as trinkets, stars, certificates of approval, and so on. The teacher would then watch to see what the child chooses as a reward.

Another possible approach is to simply ask the child what he prefers. Regardless of how a teacher determines a child's preference for reinforcing events, he should check to see that the event is truly functioning as a reward. In other words, the teacher should be sure that the event is exerting a positive influence on the behavior.

Reinforcement Schedules

Another important variable in the reinforcement process is the time when the reinforcing event is given. It is important that rewards be administered immediately following the behavior of interest. For example, we might assume that a teacher has determined that a child's behavior will be positively influenced by receiving comments of approval from adults. The teacher has been having difficulty with the child because the child has been running and being disorderly in the halls. This teacher might be interested in strengthening the child's behavior of walking quietly down the halls. In order to strengthen the behavior he is interested in, the teacher plans to administer comments of approval. One particular day the child walks quietly down the hall, and the teacher happens to be standing in the doorway and observes this child's behavior. After the child enters the room, he might go to his desk, sit down, take out a library book, and begin reading. The teacher, at this point goes over and says, "Good for you."

In this example, although the teacher intended to strengthen the behavior of quiet walking down the halls, the teacher strengthened the behavior of reading a library book. This is so because the behavior of reading a library book is the behavior which occurred immediately preceding the comment of approval. This example illustrates that in order to be sure you are reinforcing the behavior which you are interested in strengthening, you must be sure to administer the rewarding event immediately following the behavior. The teacher in the example should have administered the comment of approval just as the child came in the door of the classroom after walking quietly down the hall.

Teachers often ask, "How often should rewards be administered?" Researchers have provided two general principles which guide teachers as to the frequency of the administration of rewards. When a teacher is helping a child acquire a new behavior, the reinforcing event should be administered each time that behavior occurs. Later, after the behavior has become strengthened, the frequency of administering reinforcements should be gradually diminished. In this way the behavior can be maintained. During the maintenance stage of reinforcing behaviors, an intermittent schedule of administering reinforcement has been shown to be most effective.

Shaping

Reinforcers can be deliberately manipulated to help children acquire behaviors and to help children maintain the desirable behaviors which they already have in their repertoire. Shaping is a useful technique when we want children to acquire behaviors which they are not likely to exhibit spontaneously. Remember that in order to give a reward to the child, the child must first exhibit the behavior. In shaping, the behavior which you want the child to exhibit is decided upon. This behavior is called the target behavior since it is the one which you are aiming for. In shaping it is also important to determine which event will function effectively as a reward for the child. The child is not expected to exhibit the target behavior at the beginning of the shaping process. Recall that the target behavior is one which is not currently in the child's repertoire; i.e., he will not exhibit this target behavior spontaneously. Therefore, it is necessary to reinforce small steps which are in the direction of the target behavior. At first a very small step in the direction of the target behavior is reinforced. When the child is making this response frequently, or when it has become a strong behavior, expectations for the child are increased. Now the child must give the response which is one small step closer to the target behavior before he receives a reward. This process of gradually increasing expectations until the child has acquired the target behavior is continued. When the target behavior is eventually displayed, it is reinforced each and every time it occurs. Eventually, when the target behavior has become strong, the frequency of administering reinforcement is gradually diminished and the behavior is rewarded some of the time, but not all of the time. This is called reinforcing on an intermittent schedule. Intermittent schedules of reinforcement have been found to maintain behaviors highly effectively. The steps in the shaping process are summarized in Plate 21.3.

Here is an example of shaping a behavior. The target behavior is for the child to remain in his seat for a ten minute period. Suppose that it is known that this child is reinforced by praise from an adult. The target

SHAPING

Select target behavior.

Determine event which functions as a reward.

Reinforce succesive approximations of the target behavior.

Reinforce the target behavior each time it is performed at first.

Gradually taper off, replacing constant reinforcement with intermittent reinforcement.

Plate 21.3

behavior will be shaped by waiting for the child to take a small step in the direction of the target behavior. This first step might be that the child passes near his seat while walking about the room. The teacher must observe carefully, and at the exact moment when the child walks near his seat, the teacher says some words of praise. Soon the child will be passing near his seat often. Then the expectation can be raised, and the child must pause briefly at his seat. When he performs the behavior of pausing at his seat, the teacher makes a comment of praise. This procedure is followed by reinforcing behaviors which are successive approximations to the target behavior. Eventually we will find the child remaining in his seat for longer and longer periods of time until he is able to stay in his seat for the full ten minute period. Once the child is able to stay in his seat for a ten minute period of time, the verbal praise will be administered every time he remains in his seat. After this behavior has become strong (acquired), the teacher should shift to an intermittent schedule of reinforcement in order to help the child maintain the behavior.

Eliminating Undesirable Behaviors

Just as rewards can be manipulated to help children acquire and maintain new behaviors, rewards can be used to help children eliminate undesirable behaviors. Undesirable behaviors can be eliminated by failing to provide reinforcement. For example, many teachers have experienced the undesirable behavior in which children are constantly getting out of their seats to go to the pencil sharpener. Very often, without realizing that they are reinforcing the behavior, teachers maintain this behavior at a high level of frequency by inadvertently giving the child attention and telling him to go back to his seat. A teacher can eliminate this undesirable behavior by withdrawing the reinforcing event. When the child goes to the pencil sharpener, the teacher must simply ignore him. By withdrawing the reinforcment; i.e., by failing to give the child the attention he wants, the undesirable behavior can be eliminated. This process of getting rid of an undesirable behavior is called extinction.

Another method of eliminating an undesirable behavior is to help the child acquire a new behavior which is incompatible with the undesirable behavior. For example, we might say that the behavior of crying is incompatible with the behavior of laughing. Suppose a teacher has a child in his class who is constantly crying. This teacher might decide that the way to eliminate the child's crying behavior is to help him acquire the incompatible behavior of laughing. The teacher's reasoning would be: if the child is laughing then he cannot be crying. The teacher's strategy would be to reinforce laughing so that it eventually occurs frequently. Because the child would be laughing more, he would be crying less. In this way the teacher has eliminated the undesirable behavior of crying by helping the child acquire a new and incompatible behavior of laughing.

Key Principles and Some Cautions

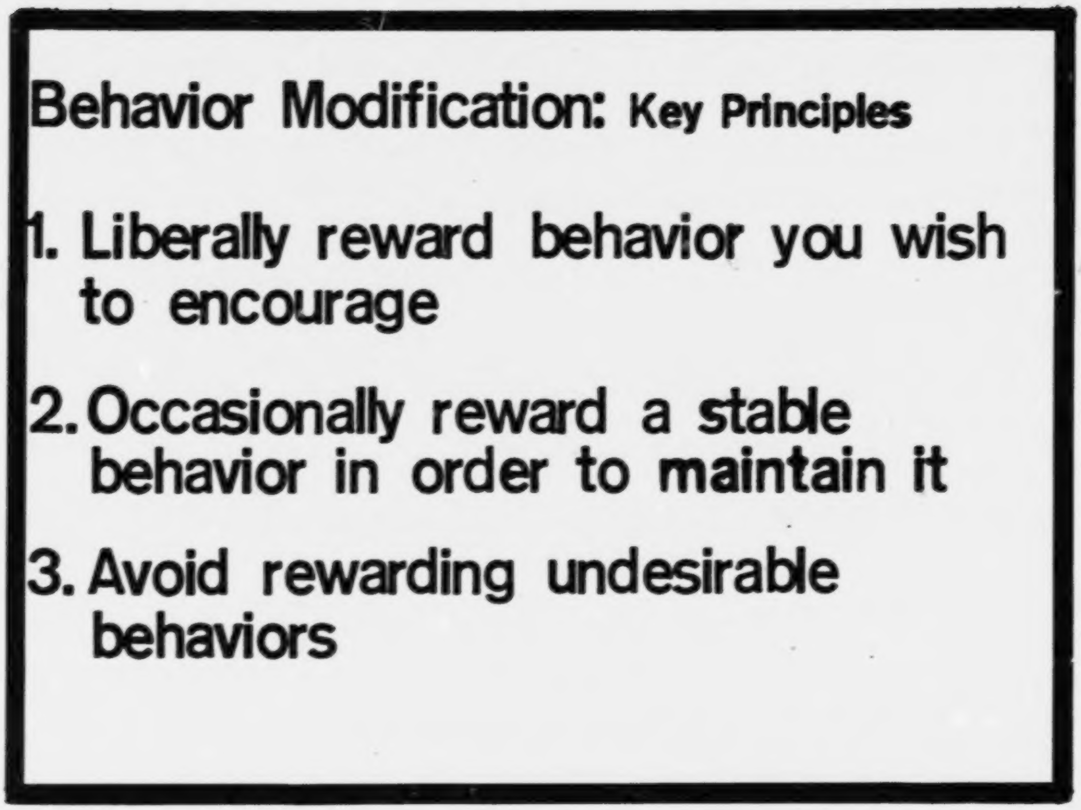
After many individuals hear a discussion about the use of rewards by classroom teachers, they think, "Well, most of that is common sense." That may be true, but, as a rule, teachers do not use this common sense often enough. Rather than allowing reinforcement to operate on a haphazard basis, teachers should use their common sense to deliberately and systematically manipulate rewards in order to enhance children's learning and management behaviors. Key principles are:

1. liberally reward behavior which you want a child to acquire;
2. occasionally reward a stable behavior in order to maintain it;
3. avoid rewarding undesirable behaviors.

These key principles are summarized in Plate 21.4.

Some final comments are needed. Teachers quite often reinforce undesirable behaviors without realizing it. This situation was illustrated by our example of the child who constantly went to the pencil sharpener. An analysis of the interaction between the teacher's behavior and the child's behavior revealed that the teacher was inadvertently reinforcing the child's undesirable behavior by providing him with attention. The example should serve as a caution. A careful analysis of a particular situation may indicate that the teacher's actions are actually reinforcing a behavior that he wishes to extinguish.

Many people frown upon the idea of giving something tangible to children as a reward for learning. Society considers individuals who find certain events reinforcing to be more mature than others. In general, individuals who desire the abstract and less obvious types of reward, such as praise, are considered to be more mature than those who desire concrete and obvious types of rewards such as candy. If a teacher is faced with a child who prefers the tangible type of reward rather than the reward which appears to be indicative of mature behavior, the teacher can help the child to learn more mature forms of behavior. If verbal praise and the tangible reward are administered together, the verbal praise will gradually take on the reinforcing properties of the tangible reward. Eventually the verbal praise alone will function as a reward



Behavior Modification: Key Principles

1. Liberally reward behavior you wish to encourage
2. Occasionally reward a stable behavior in order to maintain it
3. Avoid rewarding undesirable behaviors

Plate 21.4

for the child. If a teacher is dealing with a child who is reinforced by the types of rewards which are not as socially acceptable as verbal praise then it is incumbent upon the teacher to help the child acquire more mature forms of behavior.

Teacher Referral Statement

Name of Child: ____________________ Date of Report: ____________

Birthdate: ____________________ Sex: ____________

Teacher: ____________________ Grade: ____________

I. Achievement Data

Describe the child's typical performance in each area. Use behavioral terms so that the description is precise. Attach samples of the child's work where applicable. Cite any available test results.

A. Oral Language ____________________

Written Language ____________________

B. Reading Comprehension ____________________

Word Analysis Skills ____________________

C. Mathematical Comprehension ____________________

Computation Abilities ____________________

D. Music ____________________

Art ____________________

Dramatic Play ____________________

E. Other ____________________

Name of Child: ____________________

II. Learning Behaviors Checklist

Place a check mark next to the statements which describe behavior usually exhibited by the child. Use the comment space to elaborate on your choices and to provide supporting information.

A. Behavior Related to Inputs

_____ is attentive during most activities

_____ is attentive only during his favorite activities

_____ rarely pays attention

_____ indicates a preference for material received through the auditory channel

_____ indicates a preference for material received through the visual channel

_____ does not indicate a preference for one input channel over another

_____ performs better when information is received through the auditory channel

_____ performs better when information is received through the visual channel

_____ performs better when he receives information through a combination of visual and auditory channels

_____ is able to use tactile sensations

_____ exhibits unusual behavior during activities which require good hearing

_____ exhibits unusual behavior during activities which require good vision

Comment: ____

____

____

____

Name of Child: ____________________

B. Behaviors Related to Information Processing

_____ organizes tasks and materials so that time is used efficiently

_____ has short-term retention for most learning areas

_____ has long-term retention for most learning areas

_____ can recall information for only some selected learning areas

_____ does not remember information

_____ discriminates between sounds

_____ discriminates between shapes and figures

_____ discriminates between letters, numbers, words

_____ can make associations

_____ can recognize associations

_____ can make generalizations

_____ can differentiate between generalizations and specific facts

_____ translates from concrete experiences to abstractions

_____ is able to profit from incidental learning

_____ finishes (or attempts to finish) tasks he starts

_____ completes only those tasks he enjoys

_____ is easily distracted regardless of task

_____ follows instructions directed to a group

_____ follows instructions directed to him individually

_____ follows one direction but not a sequence of directions

Comment: ____

____

____

Name of Child: ____________________

C. Behaviors Related to Outputs

_____ volunteers comments, answers, etc. during group activities

_____ speaks spontaneously on a one-to-one basis to other child and/or adults

_____ speaks only when called on or when conversation is initiated by another person

_____ must be urged to speak

_____ shows specific speech problem (describe)

_____ performs gross motor skills in coordinated fashion

_____ performs fine motor skills in coordinated fashion

_____ is clumsy and awkward in most motor activities

_____ exhibits involuntary repetition when making a motor response

_____ exhibits involuntary repetition when making a spoken response

_____ uses a vocabulary typical of older children

_____ uses a vocabulary typical of children his age

_____ uses a limited vocabulary

_____ uses compound and complex sentences

_____ uses only simple sentences

_____ uses single words and some phrases, but not complete sentences

_____ reverses some letters and/or numbers when writing

_____ prefers right hand for most activities

_____ prefers left hand for most activities

_____ uses either hand with about equal dexterity

Comment: ____

____

____

____

Name of Child: ____________________

D. Behaviors Related to Feedback

(Place a check mark next to the events which are rewarding for the child)

_____ consumable rewards such as candy
_____ tangible rewards such as tokens which can be traded for food, prizes
_____ physical attention such as a hug, a pat on the back
_____ symbolic rewards such as grades, stars
_____ competitive rewards such as being named the winner
_____ comments of approval (verbal praise) from an adult
_____ comments or indications of approval from peers
_____ opportunities to pursue activities of his own choosing
_____ knowledge of results such as being told an answer is correct

Place a check mark next to statements which apply to the child.

_____ exhibits a strong preference for a certain type of reward;
if so, specify ______________________________
_____ does not display a preference for any one type of reward but works well for a variety of rewards
_____ needs to be rewarded several times during completion of a task
_____ can delay receiving reward until completion of task
_____ can delay receiving reward until several tasks are completed

Comment: ____

____

____

____

Name of Child: ____________________

III. Physical Symptoms Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach any medical reports which are available.

_____ is often absent

_____ is usually tired

_____ is overly active

_____ is listless, lethargic

_____ is underweight

_____ is overweight

_____ complains of headaches, dizziness

_____ has unusual posture when doing visual tasks

_____ has unusual posture when standing

_____ has unusual gait

_____ appearance of eyes is abnormal

_____ has frequent earaches

Comment: ____

____

____

____

Name of Child: ____________________

IV. Social-Emotional Behaviors Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach parent conference reports, if any.

_____ prefers working with others

_____ prefers to work by himself

_____ exhibits about equal willingness to work with others and alone

_____ gets along with others in work situations

_____ gets along with others in play situations

_____ refuses to participate in group activities

_____ adapts easily to changes

_____ needs to be carefully prepared and gradually introduced to change

_____ behavior in group activities is predictable

_____ is more easily excited than others his age

_____ has temper tantrums (kicks, screams, beats on floor, etc.)

_____ makes a deliberate attempt to be by himself

_____ exhibits an unusual amount of persistence

_____ gives up and moves to another activity when he experiences difficulty

_____ is aggressive (fights, kicks, hits, verbal insults, etc.)

Comment: ____

____

____

____

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Chapter 21

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CHAPTER 22

CASE HISTORIES*

This section of the CARE 1 Handbook consists of information used in conjunction with on-line course material. The following is a list of the contents of this chapter.

Cumulative Records - Pages 318 to 347
Observational Records - Pages 348 to 355
Academic Reports - Pages 356 to 360
DDST Test Forms - Pages 361 to 366
Profiles - Pages 367 to 368
Sociograms - Pages 369 to 370
Test Data - Pages 371 to 372
Self Report Inventory - Pages 373 to 384

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*The CAI version of this chapter was written by Miss Mary Ann Villwock.

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Ameson, Fred Wayne Sex: Male Birthdate August 24, 1964

Address: 424 Paterson Ave. Cedar Valley, Pa. Phone: 765-2907 Place of Birth: Worthington, Pa.

Previous Residences: Worthington, Pa.

Father's Name: Joseph F. Ameson (deceased) Address:

Occupation: School Grades Completed:

Mother's Name: Helen M. Ameson Address: 424 Paterson Ave. Cedar Valley, Pa.

Occupation: assembly line operator School Grades Completed: 12

Number of Brothers: 2 ; Number of Sisters: 0 ; Position in Family: 2nd

Health Data

Physical Defects: none Comments:

Vision: 50/40 Date of Test: July 8, 1969 Admin. By: R.J. Nelson, M.D.

Comments: corrective glasses prescribed

Hearing: OK Date of Test: July 8, 1969 Admin. By: R.J. Nelson, M.D.

Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:

Location: Teacher:

Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten - did not attend School Year: Teacher:

SUBJECT	GRADE	COMMENTS
Reading		
Numbers		
Fine Arts		
Language		

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Ameson
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	61	86		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Burton, James Edward Sex: Male Birthdate May 31, 1964
Address: 230 E. Riverview Dr. Cedar Valley, Pa. Phone: 765-0121 Place of Birth: Pittsburgh, Pa.
Previous Residences: Pittsburgh, Pa. (until 1966)
Father's Name: Walter J. Burton Address: 230 E. Riverview Dr. Cedar Valley, Pa.
Occupation: book salesman School Grades Completed: 12
Mother's Name: Martha T. Burton Address: same
Occupation: secretary (part-time) School Grades Completed: 12
Number of Brothers: 1 ; Number of Sisters: 1 ; Position in Family: 1st

Health Data

Physical Defects: none Comments:
Vision: OK Date of Test: Sept. 1, 1970 Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK Date of Test: Sept. 1, 1970 Admin. By: H.J. Byrne,M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Jimmy is shy - especially with girls.
Numbers	S	
Fine Arts	S	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Burton
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	58	75		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Cosner, Pamela Lynn Sex: Female Birthdate May 14, 1964
Address: 981 Columbia Ave. Cedar Valley, Pa. Phone: 765-1021 Place of Birth: Cedar Valley, Pa.
Previous Residences:
Father's Name: Paul G. Cosner Address: 981 Columbia Ave. Cedar Valley, Pa.
Occupation: bank teller School Grades Completed: 12
Mother's Name: Irene L. Cosner Address: same
Occupation: housewife School Grades Completed: 12
Number of Brothers: 1 ; Number of Sisters: 1 ; Position in Family: 2nd

Health Data

Physical Defects: none Comments:
Vision: OK Date of Test: Aug. 31, 1970 Admin. By: H.K. Marvin, M.D.
Comments:
Hearing: OK Date of Test: Aug. 31, 1970 Admin. By: H.K. Marvin, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S-	Pam could be doing much better work; she certainly does not work to her capacity.
Numbers	U	She often does not seem to concentrate on what she is doing.
Fine Arts	S-	
Language	S-	

Cosner

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

Aptitude Tests

CUMULATIVE REST RESULTS (K-6)

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	57	70		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci/	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Dunnom , Linda Sue Sex: Female Birthdate April 3, 1964
Address: 1450 Elm Blvd. Cedar Valley, Pa. Phone: 765-7984 Place of Birth: Cedar Valley, Pa.
Previous Residences:
Father's Name: Martin L. Dunnom Address: 1450 Elm Blvd. Cedar Valley, Pa.
Occupation: electrician School Grades Completed: 12
Mother's Name: Alice J. Dunnom Address: same
Occupation: housewife School Grades Completed: 12
Number of Brothers: 2 ; Number of Sisters: 0 ; Position in Family: 3rd

Health Data

Physical Defects: none Comments:
Vision: 50/ 40 Date of Test: Aug. 31, 1970 Admin. By: H.J. Byrne, M.D.
Comments: corrective glasses prescribed
Hearing: OK Date of Test: Aug. 31, 1970 Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ___ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Linda loses her temper easily
Numbers	S	
Fine Arts	S	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Dunnom
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

Aptitude Tests

CUMULATIVE REST RESULTS (K-6)

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	61	86		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Hunt, Gregory James
Sex: Male
Birthdate October 3, 1963
Address: 2102 E. Barker Ave. Cedar Valley, Pa.
Phone: 765-8563
Place of Birth: Sheraden, Mich.
Previous Residences: Sheraden, Mich.
Father's Name: Charles R. Carlson (stepfather)
Address: 2102 E. Barker Ave. Cedar Valley, Pa.
Occupation: oil company district representative
School Grades Completed: 14
Mother's Name: Janet G. Carlson
Address: same
Occupation: housewife
School Grades Completed: 13
Number of Brothers: 1 (half-bro.); Number of Sisters: 0; Position in Family: 1st

Health Data

Physical Defects: none
Comments:
Vision: OK
Date of Test: Aug. 30, 1970
Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK
Date of Test: Aug. 30, 1970
Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes X No ____ Date: 1968-69
Location: Sheraden, Mich.
Teacher: Mrs. Elizabeth Thacker
Comments: DDST administered 4-4-68. Results attached.

Scholastic Achievement (K)

Grade Level: Kindergarten
School Year: 1969-70
Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Greg is an effective leader and works well with others.
Numbers	S	
Fine Arts	S	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Hunt
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

Aptitude Tests

CUMULATIVE REST RESULTS (K-6)

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	62	90		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Jones, Marie Suzanne Sex: Female Birthdate February 1, 1964
Address: 1911 E. Hamilton St. Cedar Valley, Pa. Phone: 765-8557 Place of Birth: Cedar Valley, Pa.
Previous Residences:
Father's Name: James B. Jones Address: 1911 E. Hamilton Ave. Cedar Valley, Pa.
Occupation: postmaster School Grades Completed: 13
Mother's Name: Jane S. Jones (deceased) Address:
Occupation: School Grades Completed:
Number of Brothers: 0 ; Number of Sisters: 1 ; Position in Family: 1st

Health Data

Physical Defects: none Comments:
Vision: OK Date of Test: Aug. 31, 1970 Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK Date of Test: Aug. 31, 1970 Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	U	Marie has trouble following directions.
Numbers	S-	
Fine Arts	S	
Language	S-	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Jones
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	53	55		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Kenner, Richard Thomas Sex: Male Birthdate March 7, 1964
Address: 1819 E. Arvin Ave. Cedar Valley, Pa. Phone: 765-3214 Place of Birth: Brenton, Va.
Previous Residences: Brenton, Va. (until 1970)
Father's Name: Howard R. Kenner Address: 1819 E. Arvin Ave. Cedar Valley, Pa.
Occupation: construction worker School Grades Completed: 12
Mother's Name: Mildred A. Kenner Address: same
Occupation: secretary (part-time) School Grades Completed: 12
Number of Brothers: 0 ; Number of Sisters: 3 ; Position in Family: 3rd .

Health Data

Physical Defects: none Comments: ____
Vision: no information Date of Test: ____ Admin. By: ____
Comments: ____
Hearing: no information Date of Test: ____ Admin. By: ____
Comments: ____

Preschool Experience

Did Child attend preschool program? Yes X No ____ Date: 1968-69
Location: Brenton, Va. Teacher: Mrs. Lillian McClure
Comments: DDST administered 4-10-68. Results attached.

Scholastic Achievement (K)

Grade Level: Kindergarten - did not attend School Year: ____ Teacher: ____

SUBJECT	GRADE	COMMENTS
Reading		
Numbers		
Fine Arts		
Language		

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Kenner
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	39	20		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: McLinn, Thomas Allen — Sex: Male — Birthdate June 16, 1964
Address: Rural Route 1 Jenningsburg, Pa. — Phone: 549-1946 — Place of Birth: Cedar Valley, Pa.
Previous Residences:
Father's Name: George R. McLinn — Address: Rural Route 1 Jenningsburg, Pa.
Occupation: farmer — School Grades Completed: 12
Mother's Name: Virginia M. McLinn — Address: same
Occupation: housewife — School Grades Completed: 12
Number of Brothers: 1 ; Number of Sisters: 2 ; Position in Family: 2nd

Health Data

Physical Defects: none — Comments:
Vision: OK — Date of Test: Aug. 30, 1970 — Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK — Date of Test: Aug. 30, 1970 — Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ___ No X Date:
Location: — Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten — School Year: 1969-70 — Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Tom is a hard worker.
Numbers	S	
Fine Arts	S	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments McLinn
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	57	70		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Mellott, Allison Elizabeth Sex: Female Birthdate October 14, 1963
Address: 451 Hampton Rd. Cedar Valley, Pa. Phone: 765-8301 Place of Birth: Oakmont, Calif.
Previous Residences: Oakmont, Calif. ; Marshall, Wisc.
Father's Name: Irvin T. Mellott Address: 451 Hampton Rd. Cedar Valley, Calif.
Occupation: insurance executive School Grades Completed: 16
Mother's Name: Edith S. Mellott Address: same
Occupation: teacher School Grades Completed: 17
Number of Brothers: 2 ; Number of Sisters: 0 ; Position in Family: 3rd

Health Data

Physical Defects: none Comments:
Vision: OK Date of Test: Aug. 30, 1970 Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK Date of Test: Aug. 30, 1970 Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Allison shows leadership potential
Numbers	S	
Fine Arts	S	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Mellott
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	65	93		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Olson, Barbara Kay **Sex:** Female **Birthdate** October 28,1963
Address: 1712 Linton St. Cedar Valley, Pa. **Phone:** 765-8396 **Place of Birth:** Billington, S.C.
Previous Residences: Billington, S.C.
Father's Name: Walter W. Olson **Address:** 1712 Linton St. Cedar Valley, Pa.
Occupation: research consultant **School Grades Completed:** 18
Mother's Name: Lenora B. Olson **Address:** same
Occupation: interior decorator **School Grades Completed:** 16
Number of Brothers: 0 ; **Number of Sisters:** 0 ; **Position in Family:** ______

Health Data

Physical Defects: none **Comments:** ______
Vision: OK **Date of Test:** Aug. 28, 1970 **Admin. By:** M.P. Polke, M.D.
Comments: ______
Hearing: OK **Date of Test:** Aug. 28, 1970 **Admin. By:** M.P. Polke, M.D.
Comments: ______

Preschool Experience

Did Child attend preschool program? Yes X **No** ____ **Date:** 1969-69
Location: Billington, S.C. **Teacher:** Mrs. Grace Patterson
Comments: DDST administered 4-20-68. Results attached.

Scholastic Achievement (K)

Grade Level: Kindergarten **School Year:** 1969-70 **Teacher:** Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Barbara is a good student, although she has trouble with math.
Numbers	S-	
Fine Arts	S	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Olson
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	60	85		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Reeves, Brenda Louise Sex: Female Birthdate January 3, 1964

Address: 213 Lynden Lane Cedar Valley, Pa. Phone: 765-7845 Place of Birth: Cedar Valley, Pa.

Previous Residences:

Father's Name: Henry J. Reeves Address: 213 Lynden Lane

Occupation: plumber School Grades Completed: 12

Mother's Name: Elizabeth R. Reeves Address: same

Occupation: housewife School Grades Completed: 12

Number of Brothers: 2 ; Number of Sisters: 1 ; Position in Family: 3rd

Health Data

Physical Defects: none Comments:

Vision: OK Date of Test: Aug. 31, 1970 Admin. By: D.B. Bruce, M.D.

Comments:

Hearing: OK Date of Test: Aug. 31, 1970 Admin. By: D.B. Bruce, M.D.

Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No x Date:

Location: Teacher:

Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Brenda is a quiet girl and a very hard-working student. She gets along well
Numbers	S-	with others, but is a follower rather than a leader.
Fine Arts	S	
Language	S	

Reeves

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

Aptitude Tests

CUMULATIVE REST RESULTS (K-6)

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	55	60		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Shelby, Peter Kenneth Sex: Male Birthdate Sept. 14, 1964
Address: 6112 Carson St. Cedar Valley, Pa. Phone: 765-4099 Place of Birth: Morleyville, Fla.
Previous Residences: Morleyville, Fla. ; Glenton, Ohio
Father's Name: Howard J. Shelby Address: 6112 Carson St. Cedar Valley, Pa.
Occupation: assembly line operator School Grades Completed: 10
Mother's Name: Doris M. Shelby Address: same
Occupation: housewife School Grades Completed: 11
Number of Brothers: 0 ; Number of Sisters: 2 ; Position in Family: 3rd

Health Data

Physical Defects: none Comments:
Vision: optic atrophy - progressive Date of Test: March 3, 1968 Admin. By: R.K. Lettz, M.D.
Comments: referred to Laurence M. Leavitt, opthamologist / 3-5-68
Hearing: OK Date of Test: March 3, 1968 Admin. By: R.K. Lettz, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ___ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten - did not attend School Year: Teacher:

SUBJECT	GRADE	COMMENTS
Reading		
Numbers		
Fine Arts		
Language		

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Shelby
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

Aptitude Tests

CUMULATIVE REST RESULTS (K-6)

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	30	15		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Student's Name: Simpson, Kathleen Ann Sex: Female Birthdate March 29, 1964

Address: 430 W. Foster Cedar Valley, Pa. Phone: 765-7758 Place of Birth: Cedar Valley, Pa.

Biographical Data

Previous Residences:
Father's Name: William T. Simpson Address: 430 W. Foster Cedar Valley, Pa.
Occupation: automobile salesman School Grades Completed: 12
Mother's Name: Margaret M. Simpson Address: same
Occupation: clerk in clothing store (part-time) School Grades Completed: 13
Number of Brothers: 1 ; Number of Sisters: 1 ; Position in Family: 3rd

Health Data

Physical Defects: none Comments:
Vision: OK Date of Test: Sept. 3, 1970 Admin. By: V.E. Cole,M.D.
Comments:
Hearing: slight impairment in left ear Date of Test: Sept. 3, 1970 Admin. By: V.E. Cole, M.D.
Comments: to be retested in one year

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S	Kathy is popular with her classmates; she loves to participate in group games
Numbers	S-	
Fine Arts	S-	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Simpson
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	59	79		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Snyder, Margie Jane Sex: Female Birthdate February 24, 1964
Address: 1430 Brant Ave. Cedar Valley, Pa. Phone: 765-9766 Place of Birth: Cedar Valley, Pa.
Previous Residences:
Father's Name: Arthur V. Snyder Address: 1430 Brant Ave. Cedar Valley, Pa.
Occupation: clerk in hardware store School Grades Completed: 12
Mother's Name: Miriam L. Snyder Address: same
Occupation: telephone operator School Grades Completed: 10
Number of Brothers: 0 ; Number of Sisters: 1 ; Position in Family: 1st

Health Data

Physical Defects: none Comments:
Vision: OK Date of Test: Sept. 2, 1970 Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK Date of Test: Sept. 2, 1970 Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S-	Margie works very hard at her studies.
Numbers	S	
Fine Arts	S	
Language	S-	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Snyder
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

CUMULATIVE REST RESULTS (K-6)

Aptitude Tests

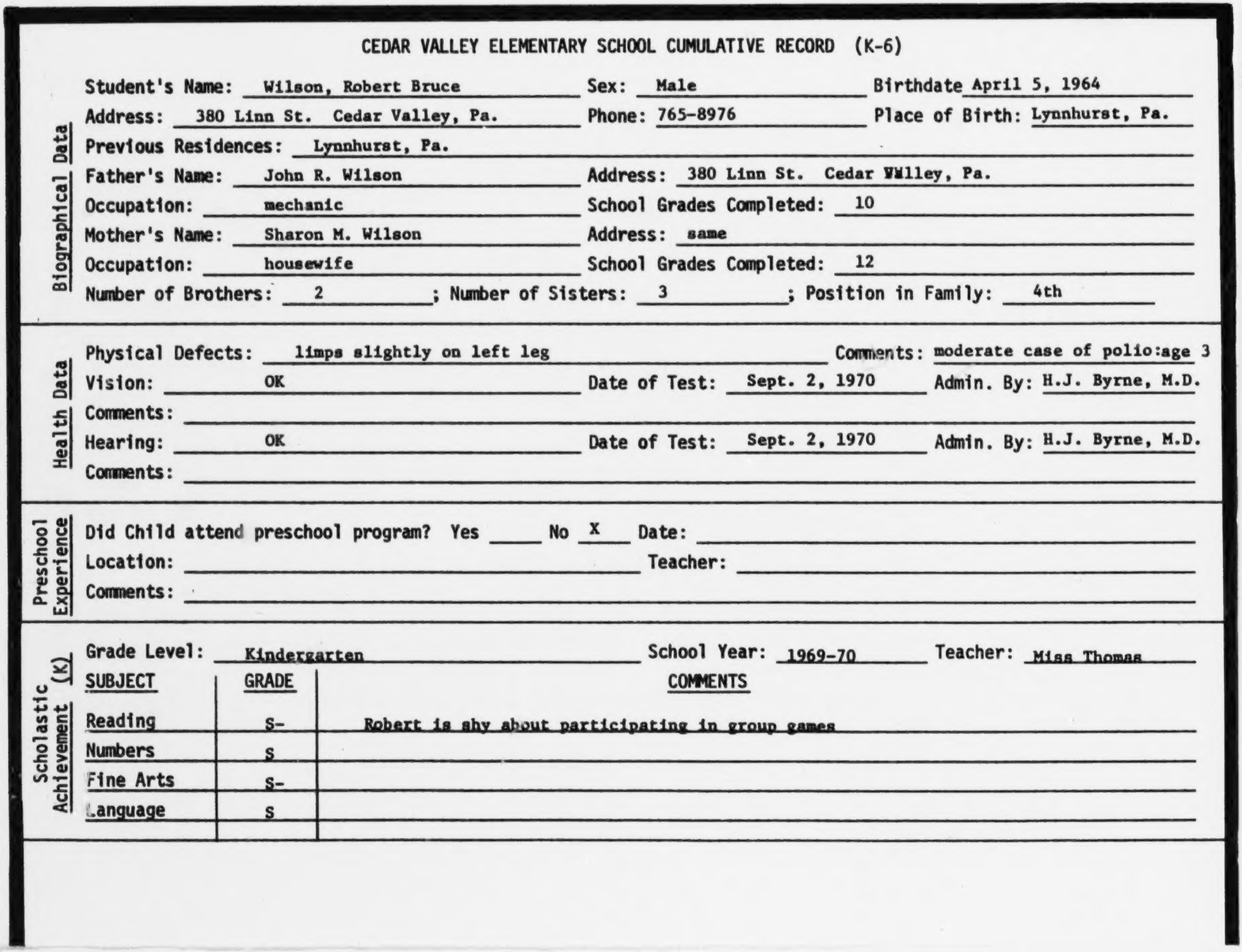
Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	56	65		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks



CEDAR VALLEY ELEMENTARY SCHOOL CUMULATIVE RECORD (K-6)

Biographical Data

Student's Name: Wilson, Robert Bruce Sex: Male Birthdate April 5, 1964
Address: 380 Linn St. Cedar Valley, Pa. Phone: 765-8976 Place of Birth: Lynnhurst, Pa.
Previous Residences: Lynnhurst, Pa.
Father's Name: John R. Wilson Address: 380 Linn St. Cedar Valley, Pa.
Occupation: mechanic School Grades Completed: 10
Mother's Name: Sharon M. Wilson Address: same
Occupation: housewife School Grades Completed: 12
Number of Brothers: 2; Number of Sisters: 3; Position in Family: 4th

Health Data

Physical Defects: limps slightly on left leg Comments: moderate case of polio:age 3
Vision: OK Date of Test: Sept. 2, 1970 Admin. By: H.J. Byrne, M.D.
Comments:
Hearing: OK Date of Test: Sept. 2, 1970 Admin. By: H.J. Byrne, M.D.
Comments:

Preschool Experience

Did Child attend preschool program? Yes ____ No X Date:
Location: Teacher:
Comments:

Scholastic Achievement (K)

Grade Level: Kindergarten School Year: 1969-70 Teacher: Miss Thomas

SUBJECT	GRADE	COMMENTS
Reading	S-	Robert is shy about participating in group games
Numbers	S	
Fine Arts	S-	
Language	S	

Scholastic Achievement

Grade Level	1	2	3	4	5	6	Comments Wilson
School Year							
Teacher							
Reading							
Arithmetic							
Science							
Social Studies							
Other-Specify							

Aptitude Tests

CUMULATIVE REST RESULTS (K-6)

Name of Test	Date	Form	Grade	Raw Score	%ile	Grade Equiv.	Remarks
ABC Readiness	10-1-70	K	1	52	50		

Achievement Tests

Name of Test	Date	Form	Grade	READING			ARITHMETIC			LANGUAGE			Soc Stu	Sci	Remarks
				Voc.	Comp.	%ile	Reas.	Comp.	%ile	Gram.	Spel.	%ile			

Misc. Tests

Name of Test	Date	Form	Grade	Raw Score	%ile	Admin. By:	Remarks

OBSERVATIONAL RECORD

Name: Richard Kenner

Sept. 30: Richard did not join the other children on the playground, but played alone with his blocks.

Oct. 1: Richard's vocabulary is more limited than that of the other children. He uses one-syllable words and short, simple sentences.

Oct. 5: Richard looked puzzled while the class was discussing their field trip to the fire station. When I asked him if he had any questions or wanted to add something, he said, "No".

Oct. 6: Richard seemed very pleased when he was appointed to care for the classroom's pet turtle.

Oct. 7: Richard continued working on his numbers when I instructed the class to look at the board.

Oct. 8: Richard seemed very tired today. He chose to stay in during recess, complaining of an earache.

Oct. 9: Richard works very hard at his numbers and seems to enjoy counting objects but cannot write numbers when they are dictated to him.

Oct. 13: Richard seemed very proud when the other children chose his art project as the best in the class.

Oct. 14: Richard was rigidly attentive during part of our health discussion today, but then paid no attention at all. The same thing occurred during story time.

Oct. 15: Richard had trouble building a bird feeder with the rest of the class, but did a good job when I stood near and directed him step by step.

Oct. 16: Richard is inattentive during our pre-reading discussion groups. He still does not discriminate between "g" and "d", even though we have worked on these sounds for two days. He has difficulty identifying sounds in new words and in comparing the sounds with those in other words that we already know.
Richard does not volunteer conversation, but responds when his attention is gained and he is spoken to directly.

Oct. 19: Richard seems to daydream often during class time. When we are working in a book, he turns to a new page only after seeing the other children do so.

Oct. 20: Richard got into a fight today when some children called him "stupid" at recess.

Oct. 21: Richard chose to count with play money by himself rather than to play "general store" with several other children.

Oct. 22: Richard often frowns during class. When I ask him if something is wrong, he says "No."

Oct. 23: Richard correctly identified all the pictures I had drawn on the chalkboard, but he did not name them in the order that I had instructed.

Oct. 27: Richard frequently does not respond when called on unless I walk to his desk and speak to him directly.

Oct. 28: Richard could not answer questions about a story that I had read to the class.

Oct. 29: Richard continued drawing on the chalkboard while several children giggled and told him he made a mistake.

Oct. 30: Richard continued coloring a pumpkin and did not join the other children when Sally called to him to take his turn bobbing for apples during the Halloween party.

OBSERVATIONAL RECORD

Name: Pamela Cosner

Sept. 30: Pamela chose to play with a group of girls who were dressing dolls rather than join the rest of the class in drawing a mural.

Oct. 2: Pamela did not answer immediately when I called on her during our numbers work. She sat very still and stared into space for several moments, then answered correctly.

Oct. 5: Pamela often seems inattentive during our reading discussion groups.

Oct. 6: Pamela's speech is not fluent. She frequently pauses for several seconds in the middle of a sentence before continuing.

Oct. 8: Pamela refused to take a speaking part in the class playlet. Instead she chose to help design costumes.
Pamela squealed when Robert startled her with a rubber mouse.

Oct. 9: Pamela got a vacant look on her face and did not speak when I asked her a question during our health discussion, even though she had just whispered the answer to Barbara.
Pamela asked my approval of her desk, even after the class decided that she had the cleanest desk in the room.

Oct. 13: Pamela has an inferiority complex in the presence of boys.

Oct. 14: Pamela frequently stares vacantly and blinks her eyes rapidly for several seconds, especially when she is asked to answer a question or recite in front of others.

Oct. 15: Pamela seems capable of doing much better in all of her subjects. She seems not to be paying attention during class periods because she frequently stops her work and stares into space.
Pamela again sat motionless and stared vacantly when I called on her during our reading discussion group. I spoke to her sharply to make her respond, but her expression did not change. A few moments later, she began attending to her book and she said she didn't hear me speak to her.

Oct. 16: Pamela refused to take her turn at "Show and Tell" again today, even though she had brought her pet rabbit. Later, however, she talked at length about her pet to Linda and Allison.

Oct. 20: Pamela again chose to play with a group of girls during the free-time period rather than with a mixed group of both boys and girls

Oct. 22: Pamela has trouble with perceptual-motor tasks such as writing and drawing. Her movements will occasionally become jerky.

Oct. 23: Pamela often seeks reassurance that she is completing a task or following instructions properly. Today, for instance, she asked me three times if she were writing her numbers correctly, even after I told her she was doing a fine job.

Oct. 26: Pamela is not as skillful as the other children at games that involve physical dexterity. Occasionally her body becomes rigid for a few moments, and the other children become disturbed. She rarely volunteers to participate in group games, but when chosen to be on a team, she will participate.

Oct. 27: Pamela stood near me and held my hand during recess rather than play with the other children.

Oct. 28: Pamela agreed to tell a story to the class after I asked her several times. However, during the story her body went rigid and she stopped talking and closed her eyes for several moments. The other children began to tease her about being a "fraidy cat" and she ran to her seat.

OBSERVATIONAL RECORD

Name: Brenda Reeves

Sept. 30: Brenda chose to stay in at recess and practice making her letters.

Oct. 1: Brenda refused to be chairman of the committee to clean up the playground, but she promised to work hard as a member of the committee.

Oct. 2: Brenda seemed very pleased when I asked her to help Linda with her numbers.

Oct. 3: Brenda cried when Fred spilled paint on her new dress.

Oct. 5: Brenda refused to guess the answer to a question that she did not know in numbers class.

Oct. 6: Brenda clapped her hands when I told her that she had done an excellent job on her science project.

Oct. 7: Brenda chose to continue working on her numbers puzzles instead of playing games with the other children during the play period.

Oct. 9: Brenda slept all afternoon, after saying that her head hurt.

Oct. 13: Brenda helped Allison care for a puppy with a hurt leg that wandered onto the playground.

Oct. 15: Brenda cried when she accidentally tore the page of a library book. Later she helped Marie tape it back together.

Oct. 16: Brenda volunteered to help draw scenery for the talent show, but she refused to be in the show, even though she had told me that she wanted to recite a poem that her cousin taught her.

Oct. 19: Brenda told me that she liked our reading discussion classes best of all.

Oct. 22: Brenda volunteered to help Kathy with her reading. She said she wants to be a teacher someday.

Oct. 26: Brenda spent 20 minutes helping Richard with his numbers. She seemed very pleased when I told her that she was a very good teacher.

Oct. 27: Brenda became angry when she made a mistake on the picture she was coloring. She tore the picture up and threw it all over the floor.

Oct. 30: Brenda won the prize for drawing the best picture of a ghost at the Halloween party, but she refused to join the other children in bobbing for apples because she did not want to get wet.

OBSERVATIONAL RECORD

Name: James Burton

Sept. 30: Jim ran away from Linda when she asked him to play with her. Jim refused to practice making his letters today. He said he doesn't like to do that.

Oct. 1: Jim smiled and showed Bobby his paper when he got a gold star for his number puzzles.

Oct. 3: Jim refused to play with Greg at recess after Greg did not choose Jim to be on his library committee.

Oct. 4: Jim chose to play marbles with Tom instead of playing hide-and-seek with a group of both boys and girls.

Oct. 6: Jim did not pay attention in our reading discussion group today. He said he was thinking about going camping with his father.

Oct. 9: Jim monopolized his Show and Tell group today by telling about his week-end camping trip with his father. He would not give anyone else a chance to talk.

Oct. 12: Jim refused to choose any girls to be on his clean-up committee.

Oct. 14: Jim cried when he accidently stepped on his new wrist watch.

Oct. 16: Jim did well in our reading discussion class today. He named six words that rhyme with "well".

Oct.119: Jim hit Fred when Fred told him that he was not a good kickball player.

Oct. 20: Jim shared his candy with Tom and Greg, but wouldn't give any to Brenda.

Oct. 22: Jim told me that he does not like his baby sister.

Oct. 23: Jim threw sand at Fred during our free time period. He refused to say that he was sorry.

Oct. 26: Jim seemed pleased when I told him that he had done a good job on his science project. He told me that he is going to be a scientist.

Oct. 28: Jim answered incorrectly when I called on him in numbers class. After that he would not try to answer any more questions.

Oct. 29: Jim cried when he accidentally spilled his milk at lunch.

Oct. 30: Jim refused to be Margie's partner in judging funny costumes at our Halloween party.

OBSERVATIONAL RECORD

Name: Peter Shelby

Sept. 28: Peter shouted out during our word discussion period today and again during our numbers work.

Sept. 29: Peter screamed and hit his head against his desk when I asked him to pay attention.

Sept. 30: Peter refused to sit in the front of the room, even though I explained that I moved him there to help him see better.

Oct. 1: Peter is awkward on the playground; he does not run and jump as well as most of the other children, and he is not often chosen to participate in their games.

Oct. 2: Peter began his science project, then left it to play with modeling clay, and then began to draw pictures on the chalk board. He attempted to hit me when I asked him to put away his materials.

Oct. 5: Peter said he couldn't answer a question in health class because he couldn't see the board. However, he refused to move closer to the board.

Oct. 6: Peter kept his head on his desk all afternoon, saying that he didn't feel well.

Oct. 7: Peter hit Bobby in the stomach when Bobby did not choose him to be on his team to play word games. Later, when teams were rechosen, Peter refused to be on Bobby's team.

Oct. 8: Peter worked on his number problems only 5 minutes then began to draw pictures. Soon he began playing with the train.

Oct. 9: Peter kicked Kathy when she accidentally bumped his arm. He tried to kick me, then began crying and screaming when I asked him to apologize.
Peter jumped up abruptly during our reading group and ran to the back of the room to play with his truck.

Oct. 13: Peter smiled and thanked me when I gave him a prize for completing his art project. He promised to finish his tasks more often.

Oct. 14: Peter talked out again in our reading discussion group with nonsensical comments that disrupted the class.
Peter began working on number games with the rest of the children, but soon left to build a tower. When I called him back to his work and played one game with him, he seemed interested, but then left again to color a picture.

Oct. 15: Peter grabbed Jimmy's shoulder and tore his shirt. He ran to his desk and began to cry when I reprimanded him.

Oct. 16: Peter stared out the window during story time. When I asked him to pay attention, he ran to the back of the room and began watching the goldfish. Later he returned to his desk and drew pictures.

Oct. 19: Peter talked loudly and distracted a group of children listening to records.

Oct. 20: Peter smiled and showed his clay sculpture to everyone in the room after Allison told him it was very nice.

Oct. 22: Peter's face became flushed and he kicked the desk when the other children laughed at him because he stumbled while playing Follow the Leader.

Oct. 23: Peter refused to take his turn at "Show and Tell" but interrupted Linda and Tommy during their presentations.

Oct. 26: Peter refused to participate in any class activities, saying that he was tired.

Oct. 27: Peter left his word puzzles to stare out the window. He returned to his work when I promised a cookie to each child who finished his work.

Oct. 28: Peter would not play with the other children who organized a game of Hide and Seek, but he tried to disrupt the game by pointing out the hiding places. When Bob told him to stop, Peter hit him.

Oct. 30: Peter was constantly in motion during the Halloween party, but he participated in each game for only a short period of time.

Peter pushed Marie's head into the water while she was bobbing for apples. He then splashed water on Brenda and Greg when they told him he was a "bad boy."

ACADEMIC REPORT

Grade: 1 Grading Period: 1

Name: Richard Kenner Teacher:

SUBJECT	GRADE	COMMENTS
Reading	U	Has trouble matching words with pictures. Frequently mixes the sounds "B" and "P", "G" and "D" and "T" and "TH". Tends to pay attention only to the beginnings of words and not to the endings.
Numbers	U	Can count to 20. Seems to enjoy counting different objects, but is behind the other children in his ability to use numerical concepts.
Writing	S-	Can copy letters when they are before him, but has trouble when they are dictated orally. Writes very carefully and makes all the letters correctly. Tries very diligently to improve his writing.
Art	S	Enjoys working with all types of art materials and is quite creative, especially with water colors and modeling clay.
Music	U	Enjoys clapping and marching to music with a strong beat, but cannot distinguish the sounds of differend patterns of rhythm. He cannot identify the story of a song and he refuses to join the other children in group singing.
Language	S-	Speaks in short, simple sentences. Often omits endings from words and confuses words with similar sounds.

ACADEMIC REPORT

Grade: 1 Grading Period: 1

Name: Margie Snyder Teacher:

SUBJECT	GRADE	COMMENTS
Reading	S-	Has trouble sounding out new words, although she works hard at improving her ability. She participates fully in the reading discussion groups.
Numbers	S	Enjoys working with numbers and is able to use numerical concepts such as "more than" and "less than".
Writing	S-	Frequently confuses the letters "b" and "d". Occasionally makes letters incorrectly through carelessness.
Art	S	Enjoys working with all types of art materials and shows some, although not a great deal, of originality.
Music	S	Participates in all music activities and is able to identify various rhythm patterns and the sounds of musical instruments.
Language	S-	Speaks fluently, but her vocabulary is slightly more limited than those of many of the other children. She seems to lack the background experiences needed to be familiar with certain words. Her ability in this area is improving.

ACADEMIC REPORT

Grade: 1 Grading Period: 1

Name: Thomas McLinn Teacher:

SUBJECT	GRADE	COMMENTS
Reading	S-	Tom studies very hard and participates in our reading discussion groups. His vocabulary is normal, but he has trouble remembering the meanings of new words.
Numbers	S	Tom especially enjoys working with number games. His ability to work with numerical concepts is fair.
Writing	S	Tom is able to make all of the letters. He has now learned the distinction between "b" and "d".
Art	U	Dislikes working with art materials. His projects tend to be stereotyped and show little originality. He also tends to be careless and messy.
Music	S-	Dislikes singing or marching to music, although he enjoys listening to records. He is able to recognize the sounds of several instruments.
Language	S	Has normal vocabulary and speaks fluently. Has trouble remembering the meanings of new words, but he enjoys using unusual words, even though he often uses them incorrectly.

ACADEMIC REPORT

Grade: 1 Grading Period: 1

Name: *Peter K. Shelby* Teacher:

SUBJECT	GRADE	COMMENTS
Reading	U	Can match words with pictures when only a few words are given at a time. After more than three or four words, he becomes distracted and stops paying attention. He is able to discriminate sounds when he pays attention but he has trouble listening for more than a few minutes at a time.
Numbers	U	Seems to enjoy counting various objects up to 20. Shows some ability to grasp the numerical concepts of "more than" and "less than", but will not work on number puzzles or games for more than a few minutes at a time.
Writing	U	Refuses to practice making his letters correctly. Instead, he draws pictures on his paper. He can, however, recognize most of the letters.
Art	S-	Seems to enjoy working with all types of art materials and shows some originality, but he rarely finishes any project that he starts.
Music	U	Often refuses to participate in group singing activities with the other children. When he does participate, he often disrupts the other children by singing extremely loud. He has poor coordination and has trouble marching or clapping in time with music.
Language	S-	His vocabulary seems normal and his speech is fluent. He occasionally makes nonsensical remarks or speaks at length in unrelated sentences.

ACADEMIC REPORT

Grade: 1 Grading Period: 1

Name: Pamela Cosner Teacher:

SUBJECT	GRADE	COMMENTS
Reading	S-	Appears not to pay attention during our reading discussion groups. She often stares ahead vacantly or flutters her eyes rapidly as if she were not aware of her surroundings. These occurrences are most frequent during oral recitations. When working alone, she is able to identify the sounds in words and match words and sounds with pictures
Numbers	S-	Pamela is able to count as well as the other children, but she often refuses to count aloud. She also shows some ability to use correctly certain numerical concepts such as "more than" and "less than". However, my feeling remains that, as in all her other subjects, Pam could be doing better than she is now doing.
Writing	S-	Her writing behavior is inconsistent. She is able to make all the letters correctly, but on occasion her markings become jerky and unintelligible.
Art	S-	Has trouble controlling her hand movements; on occasion her movements become jerky and disoriented. She frequently drops and/or spills her art materials.
Music	U	During group singing, Pam often stops and stares vacantly for a few seconds, then has trouble rejoining the others at the appropriate place. The same behavior is often evidenced when clapping or marching to music.
Language	S-	Pam's vocabulary seems normal, but her speech is not fluent. She often hesitates for several seconds in the middle of a sentence. During these periods she may close her eyes or blink her eyes rapidly. She sometimes seems confused and disoriented when she attempts to continue after one of these hesitation periods.

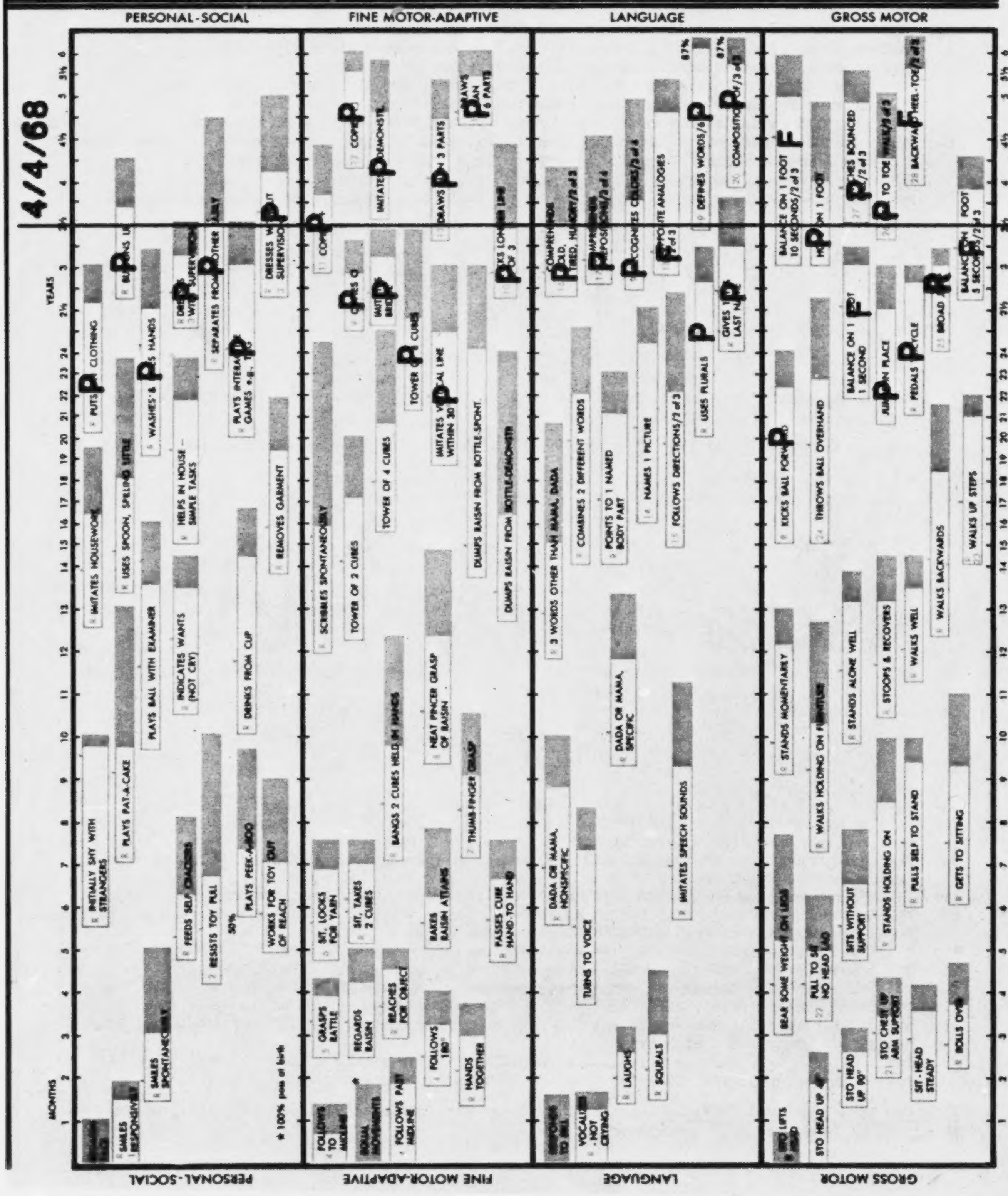
DENVER DEVELOPMENTAL SCREENING TEST

STO.=STOMACH
SIT=SITTING

PERCENT OF CHILDREN PASSING
May pass by report — 25 50 75 90 Test Item
Footnote No. - see back of form

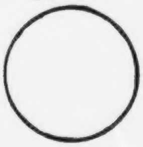
Date **April 4, 1968**
Name **Gregory Hunt**
Birthdate **October 3, 1964**
Hosp. No.

361

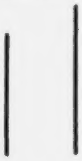


DATE
NAME
DIRECTIONS BIRTHDATE
HOSP. NO.

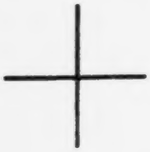
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



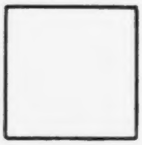
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



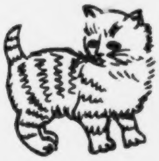
11. Pass any crossing lines.

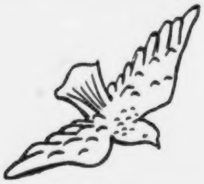


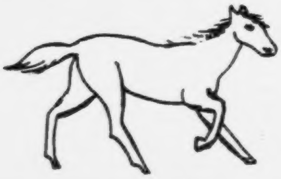
12. Have child copy first. If failed, demonstrate

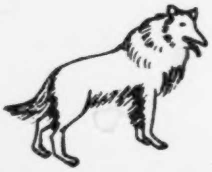
When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

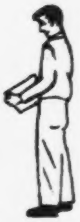
13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)

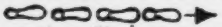
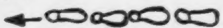










15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

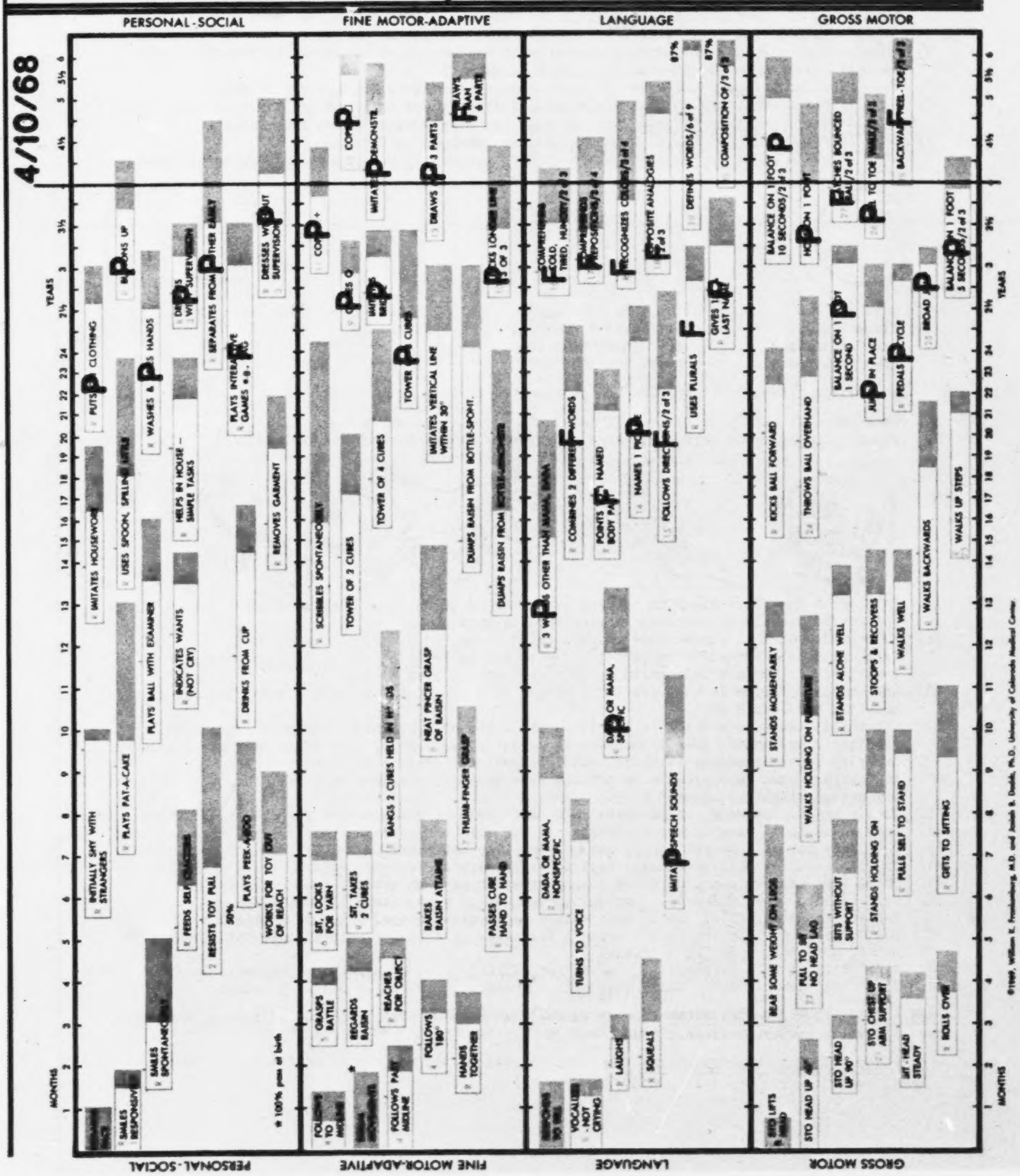
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

Date **April 10, 1968**
Name **Richard Kenner**
Birthdate **March 7, 1964**
Hosp. No.

STO. = STOMACH
SIT = SITTING

PERCENT OF CHILDREN PASSING
25 50 75 90
May pass by report
Footnote No. - see back of form
Test Item



DATE
NAME
DIRECTIONS BIRTHDATE
HOSP. NO.

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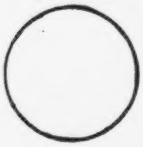

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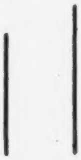

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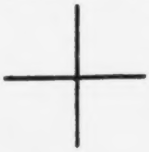
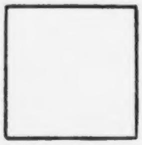


11. Pass any crossing lines.



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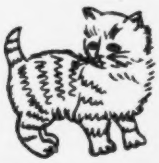

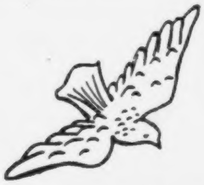

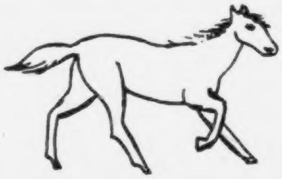

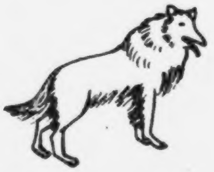

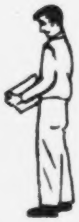

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27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward, ←⊂⊃⊂⊃⊂⊃⊂⊃ toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

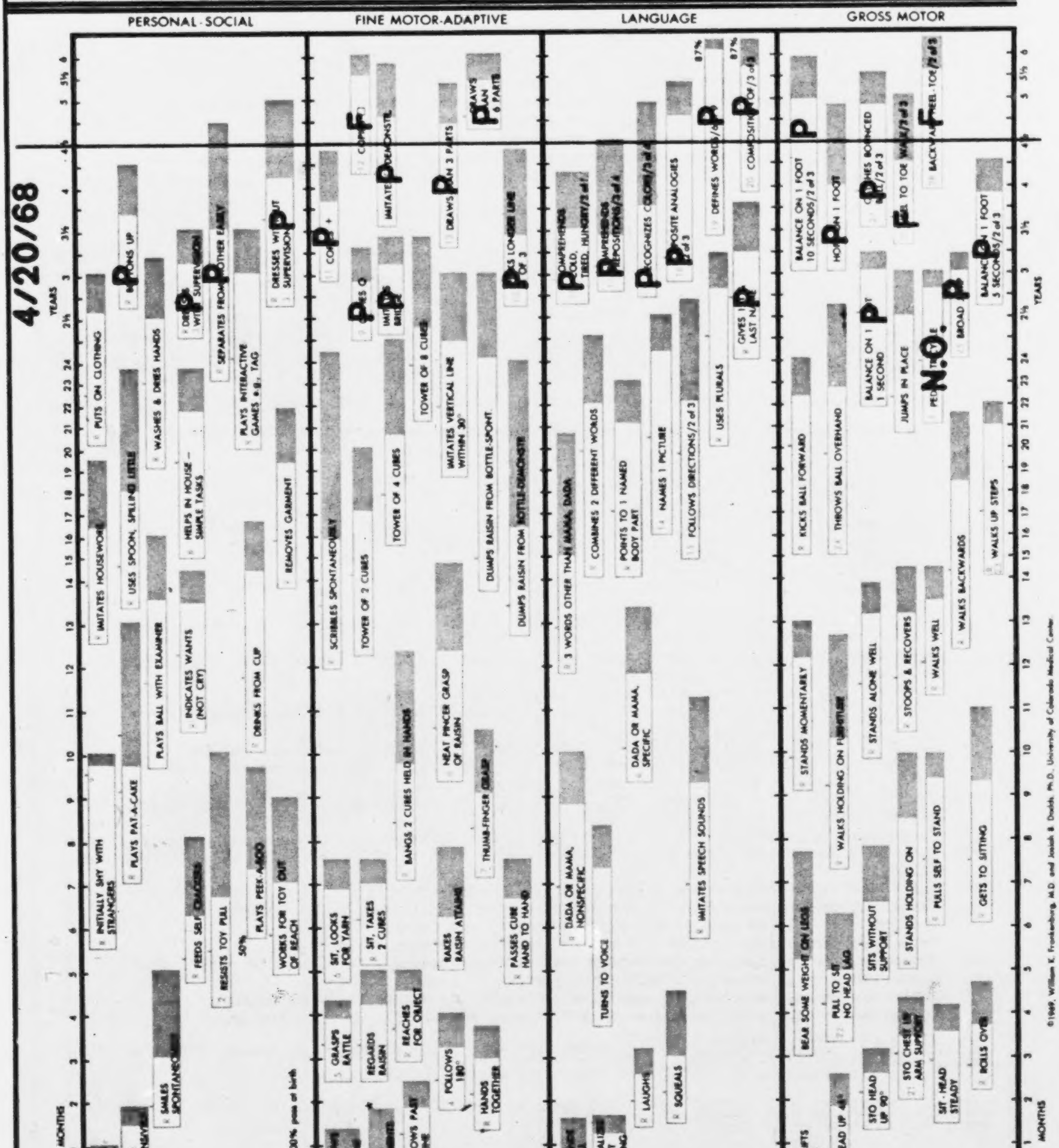
DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

DENVER DEVELOPMENTAL SCREENING TEST

STO. = STOMACH
SIT = SITTING

PERCENT OF CHILDREN PASSING
25 50 75 90
May pass by report
Footnote No. – see back of form
Test Item

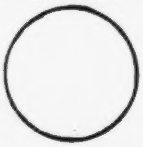
Date **April 20, 1968**
Name **Barbara Olson**
Birthdate **October 28, 1963**
Hosp. No.



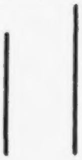
©1969, William K. Frankenburg, M.D. and Josiah B. Dodds, Ph.D., University of Colorado Medical Center

DATE
NAME
DIRECTIONS BIRTHDATE
HOSP. NO.

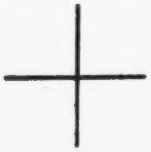
1. Try to get child to smile by smiling, talking or waving to him. Do not touch him.
2. When child is playing with toy, pull it away from him. Pass if he resists.
3. Child does not have to be able to tie shoes or button in the back.
4. Move yarn slowly in an arc from one side to the other, about 6" above child's face. Pass if eyes follow 90° to midline. (Past midline; 180°)
5. Pass if child grasps rattle when it is touched to the backs or tips of fingers.
6. Pass if child continues to look where yarn disappeared or tries to see where it went. Yarn should be dropped quickly from sight from tester's hand without arm movement.
7. Pass if child picks up raisin with any part of thumb and a finger.
8. Pass if child picks up raisin with the ends of thumb and index finger using an over hand approach.



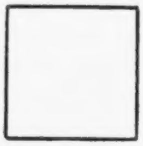
9. Pass any enclosed form. Fail continuous round motions.



10. Which line is longer? (Not bigger.) Turn paper upside down and repeat. (3/3 or 5/6)



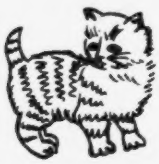
11. Pass any crossing lines.

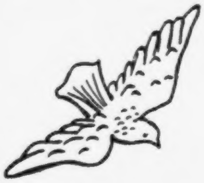


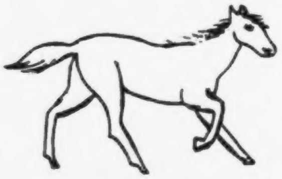
12. Have child copy first. If failed, demonstrate

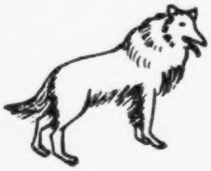
When giving items 9, 11 and 12, do not name the forms. Do not demonstrate 9 and 11.

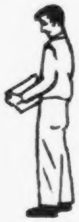
13. When scoring, each pair (2 arms, 2 legs, etc.) counts as one part.
14. Point to picture and have child name it. (No credit is given for sounds only.)

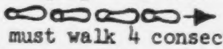
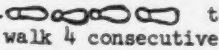








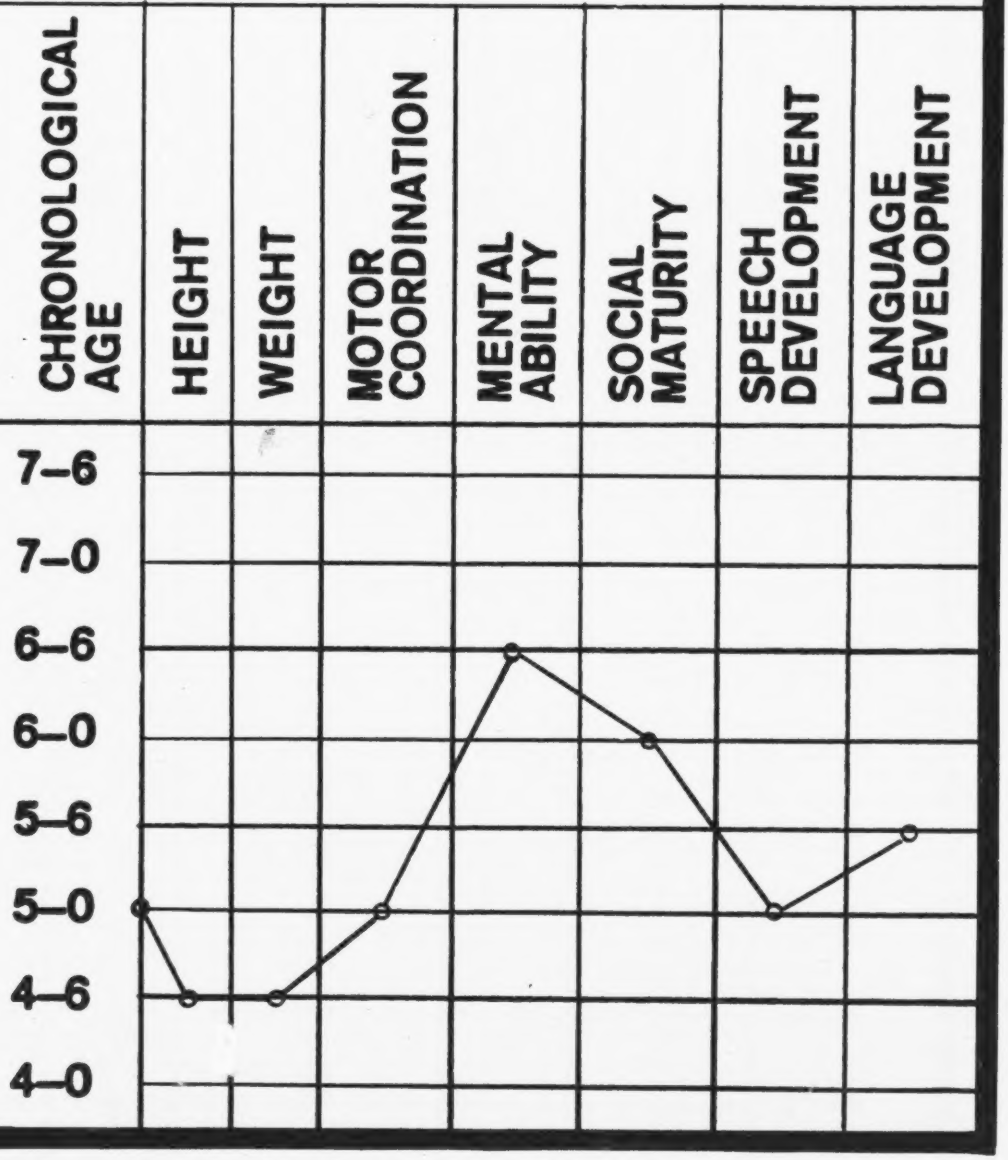


15. Tell child to: Give block to Mommie; put block on table; put block on floor. Pass 2 of 3. (Do not help child by pointing, moving head or eyes.)
16. Ask child: What do you do when you are cold? ..hungry? ..tired? Pass 2 of 3.
17. Tell child to: Put block on table; under table; in front of chair, behind chair. Pass 3 of 4. (Do not help child by pointing, moving head or eyes.)
18. Ask child: If fire is hot, ice is ?; Mother is a woman, Dad is a ?; a horse is big, a mouse is ?. Pass 2 of 3.
19. Ask child: What is a ball? ..lake? ..desk? ..house? ..banana? ..curtain? ..ceiling? ..hedge? ..pavement? Pass if defined in terms of use, shape, what it is made of or general category (such as banana is fruit, not just yellow). Pass 6 of 9.
20. Ask child: What is a spoon made of? ..a shoe made of? ..a door made of? (No other objects may be substituted.) Pass 3 of 3.
21. When placed on stomach, child lifts chest off table with support of forearms and/or hands.
22. When child is on back, grasp his hands and pull him to sitting. Pass if head does not hang back.
23. Child may use wall or rail only, not person. May not crawl.
24. Child must throw ball overhand 3 feet to within arm's reach of tester.
25. Child must perform standing broad jump over width of test sheet. (8-1/2 inches)
26. Tell child to walk forward,  heel within 1 inch of toe. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.
27. Bounce ball to child who should stand 3 feet away from tester. Child must catch ball with hands, not arms, 2 out of 3 trials.
28. Tell child to walk backward,  toe within 1 inch of heel. Tester may demonstrate. Child must walk 4 consecutive steps, 2 out of 3 trials.

DATE AND BEHAVIORAL OBSERVATIONS (how child feels at time of test, relation to tester, attention span, verbal behavior, self-confidence, etc,):

PROFILE

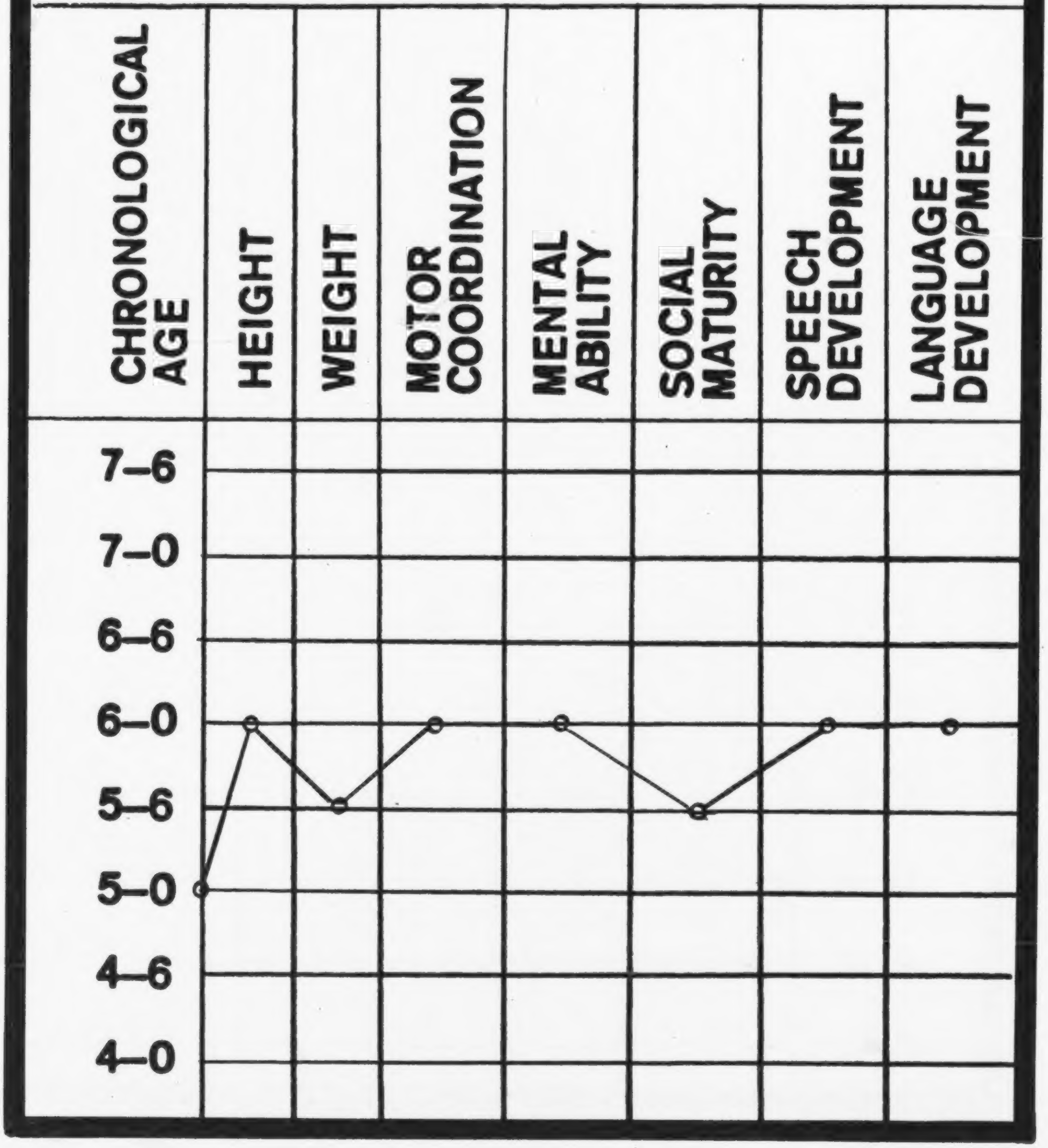
NAME Kathy Simpson **DATE** April 1969
TEACHER

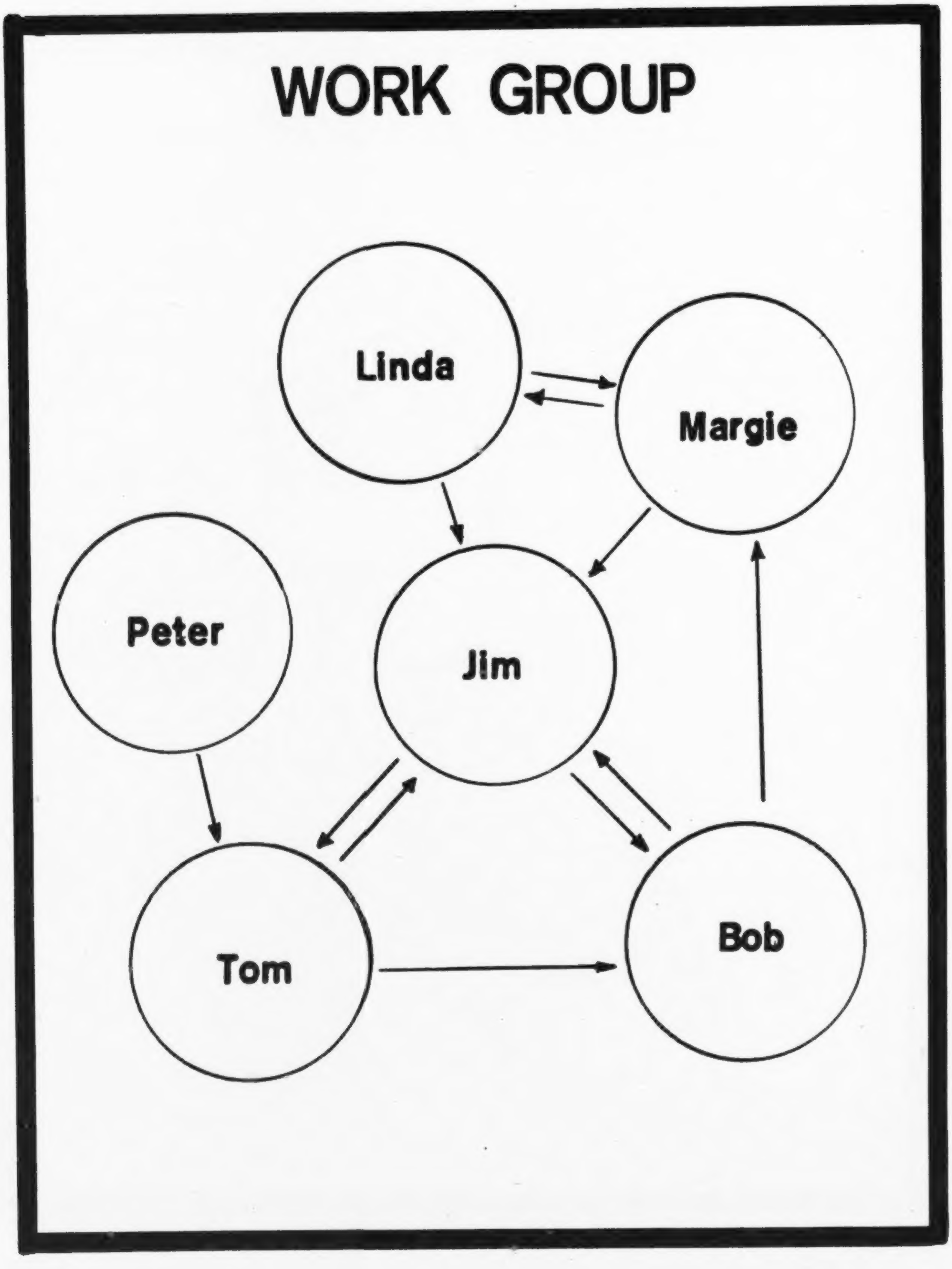


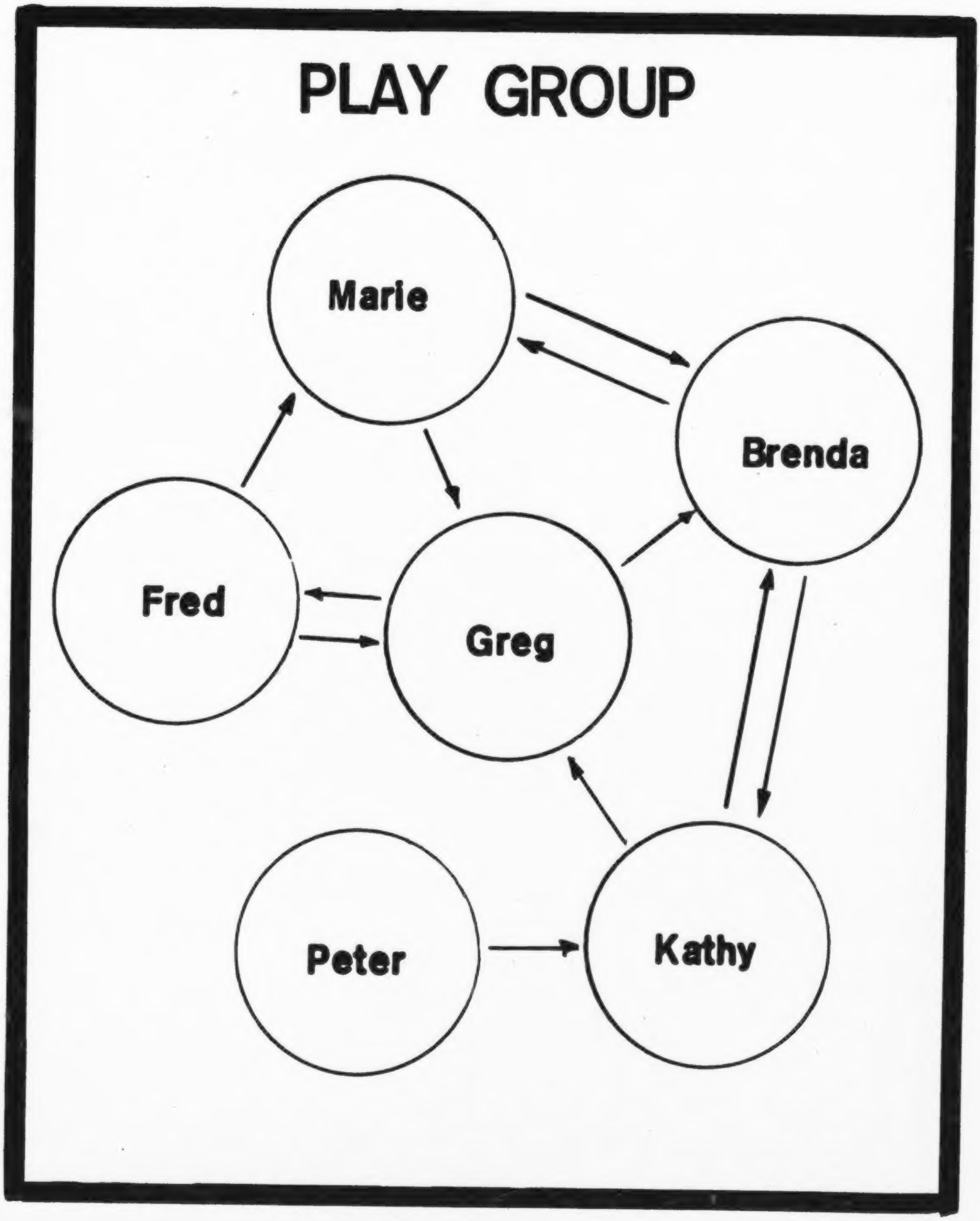
PROFILE

NAME Linda Dunnom **DATE** April 1969

TEACHER




WORK GROUP
Linda
Margie
Peter
Jim
Tom
Bob



PLAY GROUP

Marie
Brenda
Fred
Greg
Peter
Kathy

Smith Scholastic Aptitude Test

Reliability (Test-Retest) = +.82

Validity (Criterion: Teachers' ratings of performance) = +.80

Administration time = 45 minutes

Machine scored

Jones Scholastic Aptitude Test

Reliability (Test-Retest) = +.74

Validity (Criterion: Teachers' ratings of performance) = +.72

Administration time = 40 minutes

Machine scored

ABC Scholastic Aptitude Test

Reliability (split-half) = +.92

Validity: +.85

Validity Criterion: Achievement scores

Administration Time: 90 minutes

Hand scored

XYZ Scholastic Aptitude Test

Reliability (split-half) = +.90

Validity: +.82

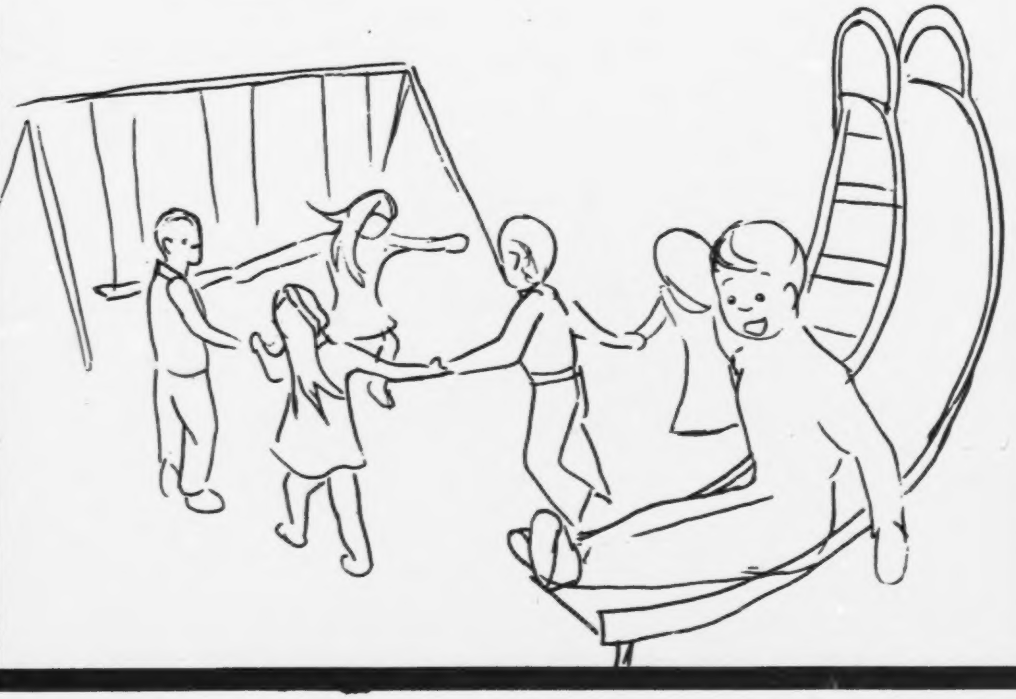
Validity Criterion: Achievement scores

Administration Time: 45 minutes

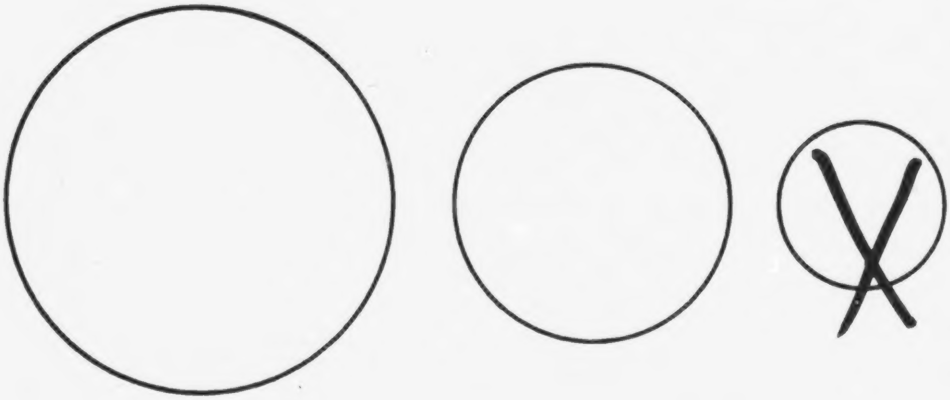
Machine scored

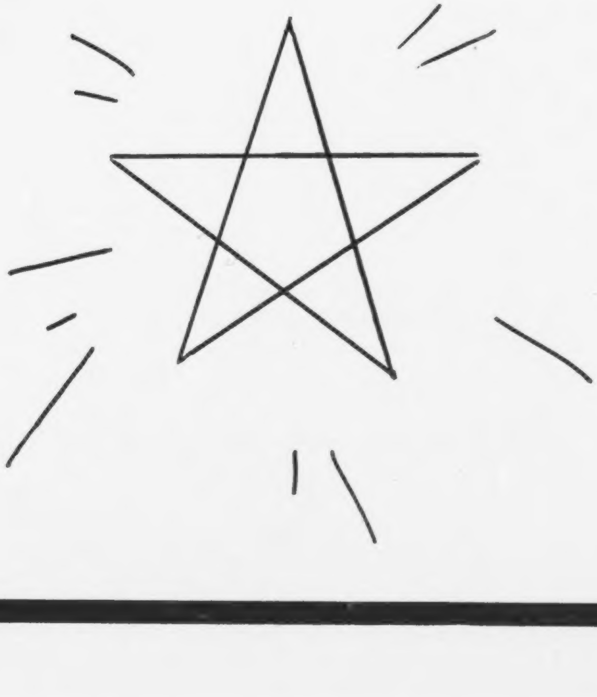
1. **I like to play with the other children in my class.**

○ ○ ☒



2. I like it when the teacher gives me a gold star for good work.





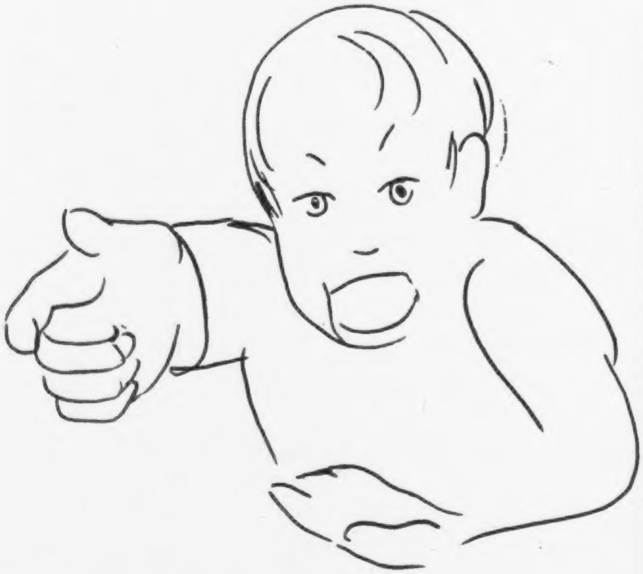
3. I feel bad when I don't finish my work.

○ ○ ☑

$$\begin{array}{rrrrr} 3 & 1 & 2 & 1 & 2 \\ +4 & +4 & +3 & +1 & +4 \\ \hline 7 & 5 & 5 & & \end{array}$$

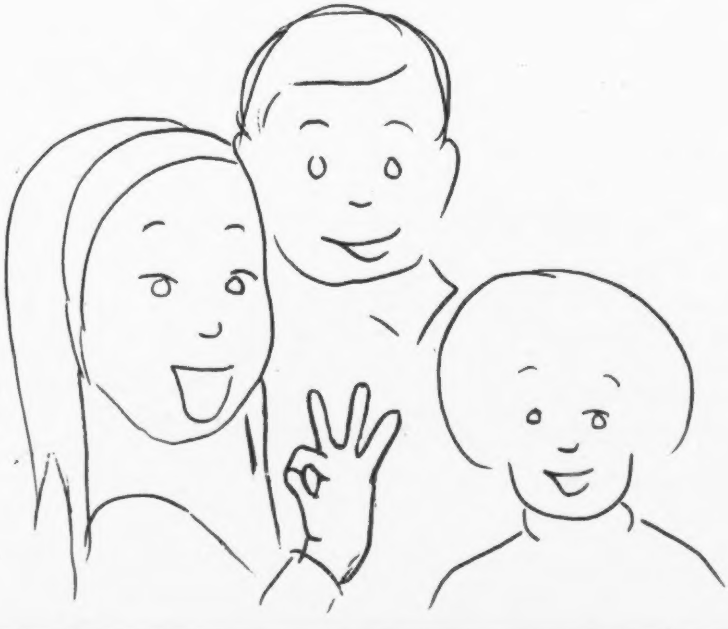
4. I get mad when people boss me around.

☒ ○ ○



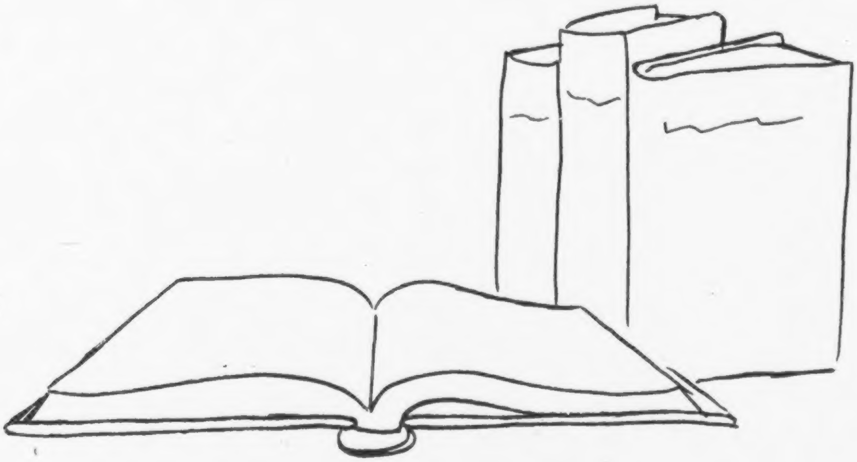
5. I like it when my classmates tell me that I have done something well.

○ [✓ ○] ○



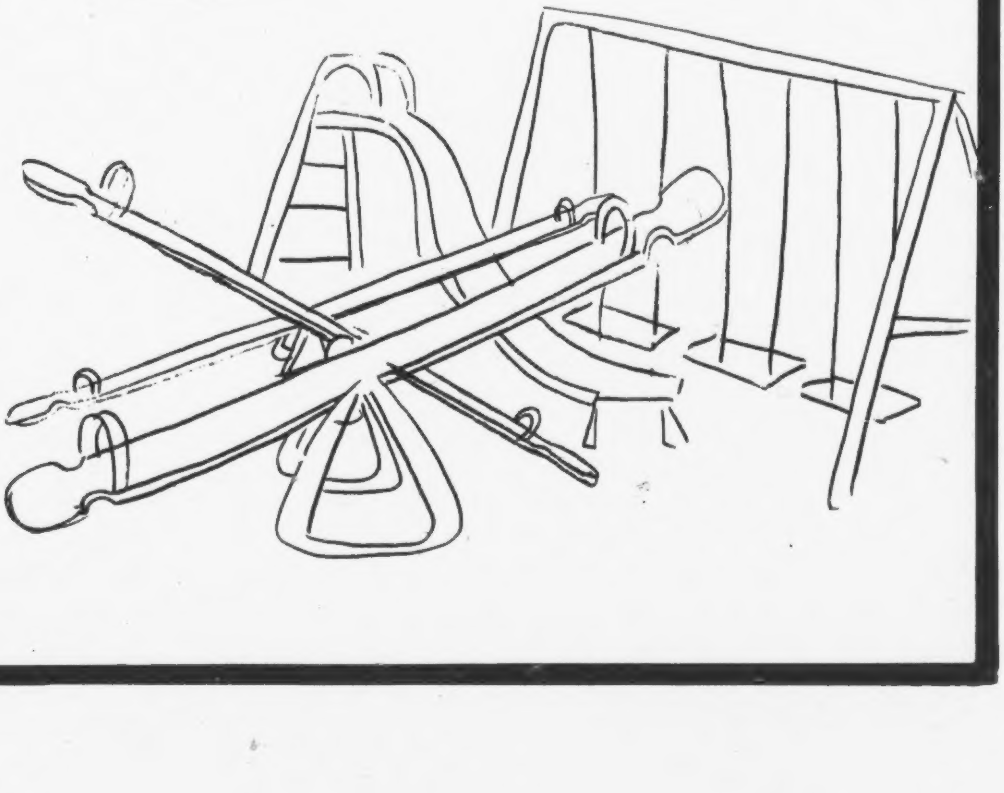
6. I think that school work is boring.

⊗ ○ ○



7. I like to play games on the playground.

○ ○ ☑



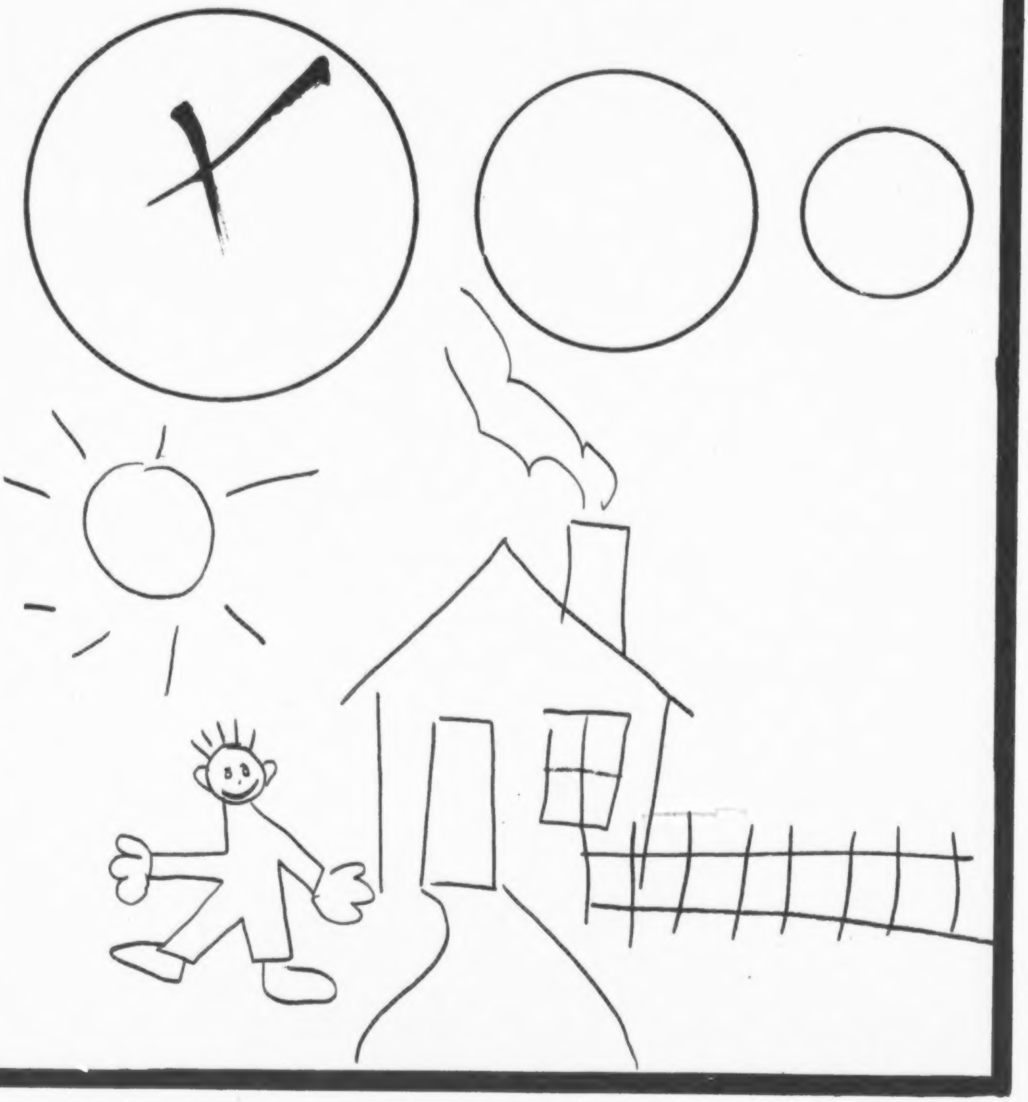
8. I like it when my teacher tells me I have done a good job.

○ ⊗ ○

9. I would like to have a best friend.

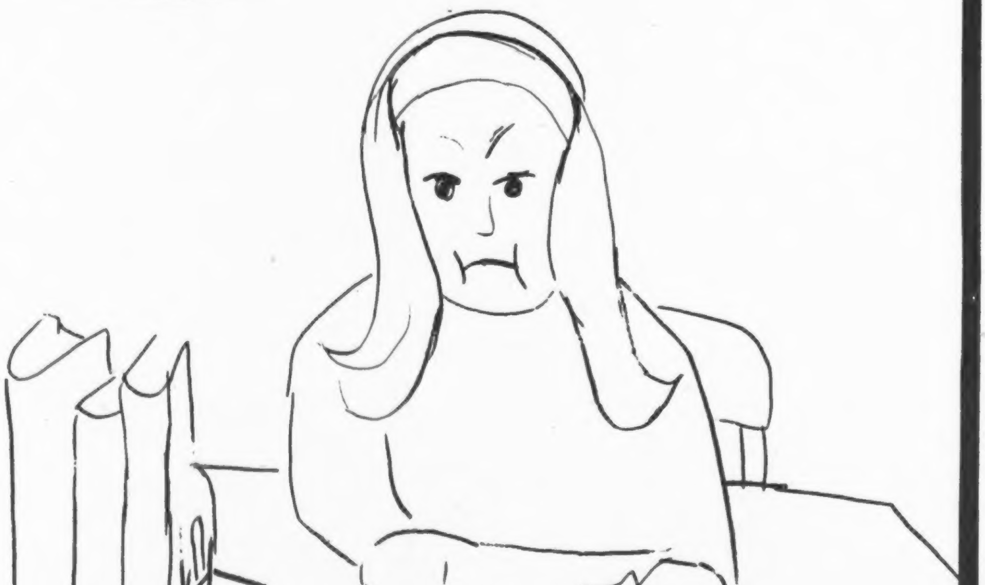
○ ○ ☒

10. I like to draw and color pictures.

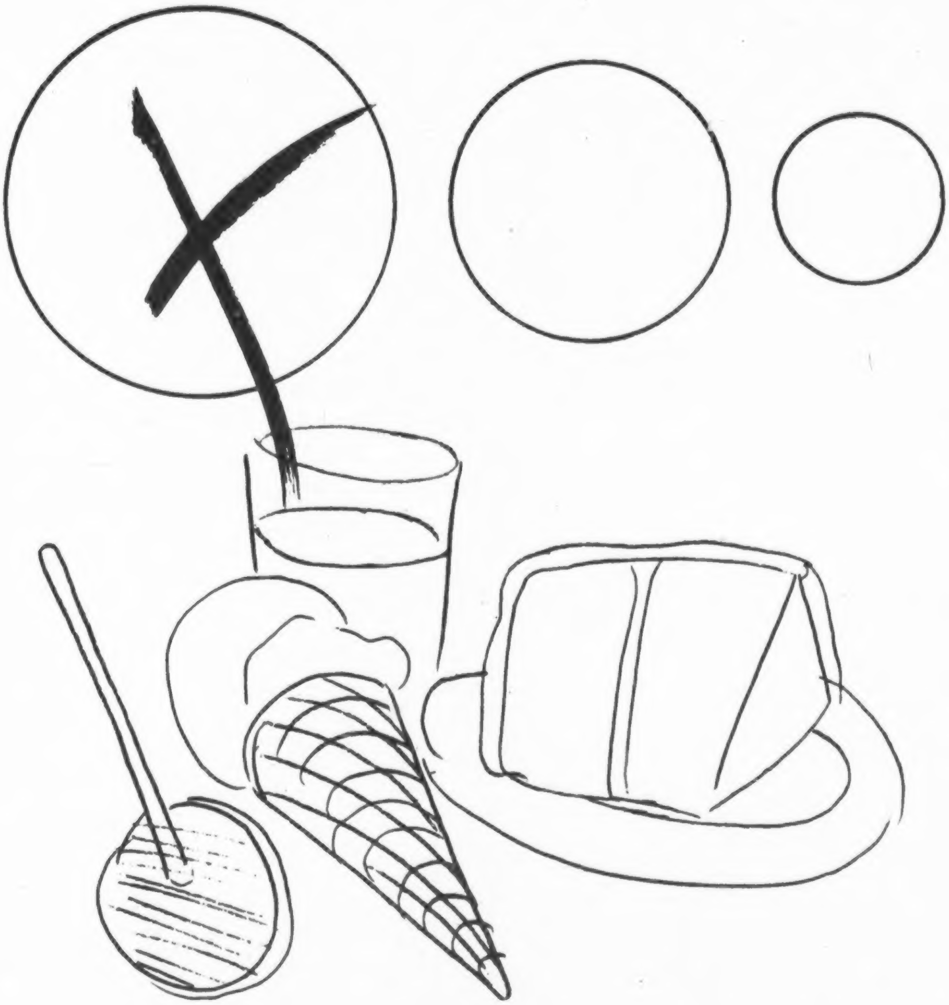


11. My teacher doesn't like me.

○ ☑ ○



12. I like to get something to eat when I do a good job.



REFERENCES

Chapter 22

Case Histories

ROSS, A. O. *The exceptional child in the family*. New York: Grune and Stratton, 1961.

CHAPTER 23

SUMMARY

This entire handbook should serve as a detailed summary and reference book for those persons who take the computer assisted instruction version of EEC 400: Introduction to Exceptional Children. The purpose of this final chapter is merely to stress several points that are made throughout the course.

Decision Process

One of the main purposes of the course was to provide educational personnel with a means of making educational decisions about children. It was stressed that the educational progress of a child may be hindered by many different factors. Judgments about the adequacy or inadequacy of a child's progress should be based upon educationally relevant variables.

Children should be evaluated continually during their early school years and each child's progress should be monitored carefully. Knowledge about the characteristics of atypical children should help educational personnel decide whether or not a given child deviates significantly from the norm or from the rest of the children in a given group. The Decision Process,designed to help teachers make decisions about the educational problems of children, is diagramed in Plate 1.4 on page 9 of this Handbook.

Information Processing Model

The Information Processing Model was introduced to help structure information about handicapped children and to help identify children who may have educational problems. A major purpose of the model is to facilitate communication with other professionals. The Information Processing Model is shown in its complete form on Plate 2.5 on page 33 of this Handbook.

Behavior

The importance of dealing with children's observable behaviors has been stressed throughout this course. However, be cautious against concluding that a child has a particular disability or handicap just because he displays one or two behaviors that are characteristic of a particular group of handicapped children.

Three important points about behavior are:

1. Identical behaviors may be found in children with different disabilities.
2. The same disability may produce different behaviors in different children.
3. Handicapped children often have related disabilities or problems.

Individualization of Instruction

Instruction for a given child should be based on that child's unique profile of strengths and weaknesses. Although a child may be identified as having a number of behaviors characteristic of a given disability or cultural subgroup, it is still essential to base the child's instruction on the basis of that child's particular set of abilities.

Data Gathering and Documentation

A teacher is in a good position to collect and evaluate many diverse kinds of information about children. If a child is suspected of having a problem that may hinder his educational progress, his case should be carefully documented for possible referral to a specialist. The documentation should be based upon reliable behavioral information. The behavioral information should be drawn from a wide variety of sources. Objective reporting of behavioral data will facilitate communication with specialists.

GLOSSARY*

The terms in this glossary were taken from the computer-assisted instruction version of EEC 400: Introduction to Exceptional Children. The terms are defined in the glossary as they were used in the course and in reference to the context of the course. Thus, the definitions may or may not be general enough for use in other situations. The chapter references after each definition refer to the chapter in the course wherein the term is used most often.

ABILITY PROFILE - A graph which depicts children's educational strengths and weaknesses in comparison with other children of the same age or grade. (Chapter 8)

ACCOMMODATION - The process which enables the eye to focus on near or far objects. (Chapter 14)

ACHIEVEMENT TEST - A test that is designed to measure how much a pupil has accomplished in a particular subject or curricular area at a given time. (Chapter 5)

ACID - A slang term for LSD, lysergic acid diethylamide. (Chapter 19)

ACIDHEAD - A slang term for a frequent user of LSD. (Chapter 19)

ADAPTIVE BEHAVIOR - The ability of a person to make appropriate responses to his environment. (Chapter 10)

AFFECTIVE - Pertaining to emotion, feeling, or attitude. (Chapter 12)

AIR CONDUCTION - One means of testing for a hearing loss with an audiometer. The sound is delivered to the ears by earphones and travels through the ear canals. See Bone Conduction for contrast. (Chapter 15)

ALTERNATIVE RESPONSE ITEMS - A type of test question which requires the student to choose one of two possible responses to a statement or question. (Chapter 5)

AMBLYOPIA - An eye condition characterized by the inability to keep both eyes coordinated; also known as "lazy eye" or "wandering eye". (Chapter 14)

AMPHETAMINE - A stimulant drug used frequently in diet pills. (Chapter 19)

AMPUTEE - A person who has lost one or more limbs. (Chapter 18)

ANECDOTAL RECORD - A factual account of a pupil's behavior at different times in different situations. See example on page 79. (Chapter 5)

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*This glossary was prepared by Mr. Judson McCune and Mr. Robert Sedlak.

APHASIA	A serious language disorder in which the person has difficulty understanding and/or producing the symbols of language. (Chapter 16)
APTITUDE TEST	A test that is designed to measure a student's capacity or potential for performing particular tasks or to predict his success in the task. Scholastic aptitude tests are often called intelligence tests. (Chapter 5)
ARTICULATION	The production of the sounds of a language. (Chapter 16)
ARTICULATION ERROR	Problem with the production of phonemes, usually involving omission, substitution, or distortion. (Chapter 16)
ARTICULATORS	Those parts of the speech mechanism responsible for articulation. The principal articulators are the lips, teeth, gum ridge, hard palate, soft palate, tip of the tongue, blade of the tongue, and back of the tongue. (Chapter 16)
ASTIGMATISM	An eye condition in which there is an irregular curvature of the cornea causing blurred or distorted vision. See illustration on page 210. (Chapter 14)
ATAXIA	A form of cerebral palsy characterized by an impaired balance, uncoordinated movements, and a stumbling or weaving gait. (Chapter 18)
ATHETOSIS	A form of cerebral palsy characterized by involuntary contraction of successive muscles resulting in a worm-like writhing movement. (Chapter 18)
AUDIOGRAM	A graphic representation of the results of a pure tone audiometric hearing test. See illustration on page 227. (Chapter 15)
AUDIOLOGIST	A hearing specialist trained to administer and interpret non-medical aspects of hearing examinations. (Chapter 2, 15)
AUDIOMETER	A device for measuring a person's ability to hear sounds of different pitch and loudness. (Chapter 15)
AUDITORY	Pertaining to the ear or hearing. (Chapter 2)
AUDITORY PERCEPTUAL DISCRIMINATION	The ability to differentiate among sounds. (Chapter 20)
AUDITORY PERCEPTUAL PROBLEMS	Difficulties in the processes of classifying, categorizing, or storing auditory information. (Chapter 20)
AUDITORY TRAINING	Training to make best use of the sounds the child can receive. (Chapter 15)
BAG	A slang term for a package of drugs. (Chapter 19)
BARBITURATES	The largest group of depressant drugs. (Chapter 19)
BARBS	A slang term for barbiturates. (Chapter 19)

BAR GRAPH - A graphical representation of data which has a single dimension value scale. (Chapter 7)

BASELINE - Points on a graph which serve as reference points against which a person's scores are compared to determine differences. (Chapter 8)
Also, the straight line portion of the normal curve along which standard deviations, normal deviates, percentile ranks, and stanines are measured. (Chapter 7)

BEHAVIOR - An activity, observable act, or performance. (Chapter 1)

BEHAVIOR MODIFICATION - The systematic application of principles of reinforcement for the purpose of changing a person's behavior. (Chapter 21)

BENNIES - A slang term for amphetamines. (Chapter 19)

BENZEDRINE - A stimulant drug. (Chapter 19)

BINET - See Stanford-Binet Intelligence Scale

BONE CONDUCTION - One means of testing for a hearing loss with an audiometer. The sound is generated by a vibrator which sets the headbones into vibration. The sound bypasses the usual ear canals to the end organ in the cochlea. (Chapter 15)

BRAIN INJURY - Structural damage to the central nervous system. (Chapter 3)

BUM TRIP - A slang term for a bad reaction to hallucinogenic drugs. Also called a "bummer". (Chapter 19)

BUTTONS - A slang term for peyote. (Chapter 19)

CATARACT - An eye disorder in which the crystalline lens becomes cloudy, causing poor visual acuity and a severely restricted field of vision. (Chapter 14)

CATEGORY SYSTEM - The classification of exceptional children on the basis of disabilities. (Chapter 1)

CENTRAL HEARING LOSS - Hearing impairment due to a dysfunction in the brain. (Chapter 15)

CEREBRAL PALSY - A condition characterized by any abnormal alteration of movement or motor function arising from defect, injury, or disease of the nervous tissue in the brain. (Chapters 3, 18)

CEREBRATION - The wide range of mental abilities necessary for speech. (Chapter 16)

CHECKLIST - An observational technique which consists of a list of behaviors, characteristics, or traits which are marked as being present or absent for a particular child's behavior sample. See illustration on page 75. (Chapter 5)

CHRONIC HEALTH PROBLEMS - Those long term or permanent problems which may affect a child's educational program and may necessitate a modification of facilities or curriculum. (Chapter 18)

CILIARY MUSCLES - Eye muscles which control the amount of light that reaches the retina; also important in the accurate focusing of the eye on near and distant objects. (Chapter 14)

CLUTTERER - A person who stumbles over sounds and has a jerky rhythm because of rapid rate of speaking. (Chapter 16)

COCAINE - A drug which is medically classified as a stimulant but legally as a narcotic; obtained from the leaves of the coca plant. (Chapter 19)

COLD TURKEY - Slang term for sudden withdrawal of narcotics. (Chapter 19)

COMMUNICATION - The process of sending and receiving ideas, symbols, or feelings. (Chapter 16)

CONDUCTIVE HEARING LOSS - Hearing impairment dealing with problems of getting sound to the inner ear. (Chapter 15)

CONTENT VALIDITY - The extent to which an evaluation procedure samples behaviors and content it is intended to measure. (Chapter 6)

CONTINUOUS VARIATION - Indicates that a given score extends one-half unit (of measure) below and one-half unit above the measured unit. (For an example see page 104. (Chapter 7)

CORNEA - The transparent part of the eyeball that covers the iris. See illustration on page 209. (Chapter 14)

CORRELATION - A statistical procedure for determining the degree of relationship between variables. (Chapter 6)

CORRELATION COEFFICIENT - A numerical representation of the degree of relationship that exists between two variables. (Chapter 6)

CRITERION - A norm or standard to which a particular performance is compared. (Chapter 6)

CROSS-VALIDATION - Conducting a second study using a group similar to the standardization group to check the validity of a test or other measurement device. (Chapter 9)

CULTURAL GROUPS - People who share similar beliefs or who share easily identifiable characteristics. (Chapter 11)

CULTURAL SUBGROUPS - Smaller collections of people in the larger cultural group. These people are like the larger cultural group in many ways, but differ significantly from the larger group in other ways. (Chapter 11)

CURRICULAR VALIDITY - See Content Validity. (Chapter 6)

CUSTODIAL - A classification of mental retardation that includes individuals who are not able to care for their bodily needs. Custodial persons are usually cared for in institutions. (Chapter 10)

CUT - The dilution of drugs by the addition of milk, sugar, or some other inert substance. (Chapter 19)

CUTTING SCORE - A raw score on a test or other instrument that is used to separate persons into two or more groups. (Chapter 13)

DEAFNESS - A severe or complete loss of hearing sensitivity. (Chapters 3, 15)

DECIBEL - Unit used to measure hearing intensity or loudness. (Chapter 15)

DECILE - Points at which the normal curve is divided into 10 equal parts. (Chapter 7)

DECISION PROCESS - Systematic means of locating and diagnosing children who have educational problems and to make referrals or implement educational modifications. (Chapters 1, 4)

DECK - A slang term for a package of narcotics. (Chapter 19)

DELAYED SPEECH - The lack of speech or immature speech in school age children. (Chapter 12)

DEPRESSANTS - A category of drugs which act as relaxants and induce sleep; sedatives. (Chapter 19)

DEVIATE - Different from normal expectations. (Chapters 1, 4)

DEVIATIONS - Characteristics which are significantly different from normal expectations. (Chapters 1, 4)

DEXEDRINE - A stimulant drug. (Chapter 19)

DDST - The Denver Developmental Screening Test; a screening test used to identify young children who have developmental problems. (Chapter 9)

DIAGNOSTIC SPECIALIST - A professional who is trained to conduct intensive study of certain problems. (Chapter 10)

DIAPHRAGM - A domed muscle located at the floor of the chest cavity. (Chapter 16)

DIME BAG - A slang term for a $10 package of drugs. (Chapter 19)

DIOPTER - A unit of measurement of the light-bending power of a lens. (Chapter 14)

DISABILITY - A functional loss of some part of the body. Usually refers to a loss of function resulting from a structural impairment at the cellular tissue level. (Chapter 1)

DISADVANTAGED - Refers to children who: 1) have adequate intelligence, 2) do not function well in educational situations, 3) have a culturally inappropriate background. Children's inappropriate background is assumed to be responsible for their inadequate social and educational performance. (Chapter 11)

DISCRIMINATION - The ability to differentiate among similar stimuli. An example of auditory discrimination is the ability to differentiate among words and sounds. (Chapter 15)

DISTRACTOR - Incorrect answer used in selection type test items. (Chapter 5)

DOWNERS - A slang term for depressants or sedatives. (Chapter 19)

DRUG ABUSE - The misuse of drugs in any of the following ways: 1) taking them in excess, 2) habitually without a doctor's advice, or 3) for a purpose other than that for which they were originally intended. (Chapter 19)

DRUG DEPENDENCE: A state of physical or psychological need for drugs. (Chapter 19)

EDUCATIONAL POTENTIAL - Theoretical maximum educational performance of a child. (Chapter 1)

EDUCATIONALLY DEAF - Hearing too poor to permit the normal learning of speech. (Chapter 15)

EMOTIONAL DISTURBANCE - A condition characterized by behavior deviations which has a detrimental effect on a child's development and social adjustment. (Ch. 12)

EMOTIONALLY HANDICAPPED - A child whose behavioral problems interfere with his ability to function effectively. (Chapter 12)

EPILEPSY - A condition marked by disturbed electrical rhythms in the brain resulting in loss of consciousness for short lengths of time; seizure. (Chapter 18)

EQUIVALENT FORMS RELIABILITY - A type of reliability in which two forms of a test, designed to meet the same item specifications, are shown to have similar means and variance. (Chapter 6)

ETIOLOGY - The cause of a condition. (Chapter 3)

EVALUATION - The process of making value judgments, based on behavioral information, about the extent to which a child has achieved an objective (Chapter 5)

EXCEPTIONAL CHILDREN - Those children who differ from the average child on certain educationally relevant variables to such an extent that they need special educational provisions. (Chapters 1, 8)

EXPRESSIVE LANGUAGE - The production (verbally or motorically) of meaningful communication. (Chapter 20)

EXTINCTION - Process of eliminating an undesirable behavior by withdrawing reinforcement. (Chapter 21)

EXTRAPOLATE - To infer values of a variable in an unobserved interval from values within an already observed interval; to project or extend known data into an area not known. (Chapter 7)

FEEDBACK - The stage of information processing in which a person receives knowledge of results of his actions or monitors his own behavior. (Chapter 2)

FGST - First Grade Screening Test; a screening test used to identify children who may not profit from instruction at the first grade level. (Chapter 13)

FIX - A slang term for an injection of narcotics. (Chapter 19)

FLASHBACK - A reaction to LSD in which hallucinations may recur at any time without warning even long after use of the drug has been discontinued. (Chapter 19)

FREQUENCY - The number of times a particular score is obtained.

FREQUENCY RANGE - Extent of low to high sounds (as on a musical scale) that can be heard. Frequency range for speech is 500 to 2000 Hz. (Chapter 15)

FRICATIVES - Refers to the manner in which the consonants, f, v, s, z, sh, and zh are produced. (Chapter 16)

GAIT - Manner of walking. (Chapter 18)

GOOFBALLS - A slang term for barbiturates, sleeping pills. (Chapter 19)

GRADE LEVEL EQUIVALENT - The median score on a given test for all children tested in a given school grade at a certain point in time. (Chapter 7)

GRAND MAL SEIZURE - An epileptic seizure that lasts for a minute or two and is characterized by body rigidity, shaking, and then unconsciousness. (Chapter 18)

GRASS - A slang term for marihuana. (Chapter 19)

GUSTATORY - The sense of taste. (Chapter 2)

H - A slang term for heroin. (Chapter 19)

HABITUATION - Use of drugs out of habit or emotional need. (Chapter 19)

HALLUCINOGENS - A category of drugs which produce hallucinations and delusions; psychedelics. (Chapter 19)

HANDICAP - The inability to function adequately in a situation; inability to function may be due to the presence of a disability; however, a person with a disability may not be handicapped. (Chapter 1)

HANDICAPPED CHILDREN - Those children who deviate so far from the average that they cannot profit satisfactorily from regular school programs and thus require special provisions in order to achieve their educational potentials. (Chapter 1)

HARD-OF-HEARING - A temporary or chronic loss in which hearing is still functional although defective. (Chapter 15)

HARD STUFF - A slang term for narcotics. (Chapter 19)

HEARING AID - A device composed of a microphone, amplifier, power source and receiver which amplifies sound. (Chapter 15)

HEARING HANDICAP - The effect of a hearing impairment. (Chapter 15)

HEARING IMPAIRMENT - Any kind of malfunction of the auditory mechanism. (Chapter 15)

HEARING LEVEL - See threshold of hearing. (Chapter 15)

HEARTS - A slang term for amphetamines. (Chapter 19)

HEMIPLEGIA - A topographical classification of cerebral palsy in which one arm and one leg on the same side of the body are involved. (Chapter 18)

HETEROGENEOUS - Differences among individuals on a given characteristic. (Chapter 11)

HIGH - Under the influence of drugs. (Chapter 19)

HISTOGRAM - A graphical representation of data which has two-dimensional value scales instead of a single dimension. (Chapter 7)

HOMOGENEOUS - The similiarity among individuals on a given characteristic. (Chapter 11)

HOOKED - A slang term for being drug dependent. (Chapter 19)

HYPERACTIVITY - Exceedingly active behavior not typical of most children; e.g., constant fidgeting, being out of seat frequently, high distractability. (Chapter 3)

HYPERKINETIC - Overactive; see hyperactive. (Chapter 19)

HYPEROPIA - An eye disorder in which objects near at hand cannot be seen clearly; farsightedness. See illustration on page 210. (Chapter 14)

HYPOACTIVITY - A pronounced absence of physical activity as compared to most children; lethargy; e.g., frequent sleepiness, little movement. (Chapters 3, 18)

H_Z - A measure of frequency; cycles per second; hertz. (Chapter 15)

INAPPROPRIATE BEHAVIOR - Behavior that is not suitable for a person of a given age for a particular situation. (Chapter 12)

INCIDENTAL EVALUATION - Evaluation in which the stimuli used to elicit data are not planned. See page 60 for an example. (Chapter 5)

INDIVIDUAL DIFFERENCES - Traits, abilities, and performance differences between people, or within a person. Theoretically no two people are exactly the same in any given area of comparison. (Chapter 1)

INDIVIDUALIZED EDUCATIONAL PROGRAM - An education program planned specifically to meet an individual learner's strengths and/or weaknesses. (Chapter 1)

INFERENCE - The process of drawing conclusions about processes which cannot be directly observed. (Chapter 3)

INFORMATION PROCESSING MODEL - A theoretical explanation of the process of receiving sensory stimuli, processing the information, and responding either motorically or verbally. (Chapter 2)

INPUT - The reception of information. Information may be received through the auditory, visual, tactile, olfactory, and gustatory senses. (Chapters 2, 20)

INTELLECTUAL FUNCTIONING - The ability to use cognitive processes in adapting to the environment. (Chapter 10)

INTELLECTUAL POTENTIAL - Theoretical maximum mental capacity of a child. (Chapter 11)

INTELLIGENCE QUOTIENT: The ratio of mental age (MA) to chronological age (CA); IQ is determined by dividing MA by CA and multiplying by 100. $IQ = \frac{MA}{CA} \times 100$ (Chapter 10)

INTER-INDIVIDUAL DIFFERENCES - Differences between individuals. (Chapter 4, 8)

INTERMITTENT SCHEDULE - Reinforcing a child's behavior, once it has been acquired, at random times in order to maintain a high level performance of the behavior. (Chapter 13)

INTERPOLATE - To estimate values between two known (observed) values. (Chapter 7)

INTERPRETIVE EXERCISE - A type of test item used to determine if a student can apply information which he is given to solve problems, recognize assumptions, or draw implications. See the example on page 63-65. (Chapter 5)

INTERVIEW - A dialogue between two people for the purpose of gathering information. (Chapter 5)

INTRA-INDIVIDUAL DIFFERENCES - The differences in performance within one child on different variables or on the same variable at different times. (Chapters 4, 8)

INTRA-SCORER RELIABILITY - The degree of agreement that the same scorer exhibits in applying the same set of standards to the performances or products of different children. (Chapter 6)

INVENTORY - A list of statements from which a child chooses the ones that he feels best apply to him. (Chapter 5)

IRIS - The colored part of the eye. See the illustration on page 143. (Chapter 14)

JOINT - A slang term for a marihuana cigarette. (Chapter 19)

JUNK - A slang term for heroin. (Chapter 19)

KICK THE HABIT - A slang expression for terminating the use of drugs. (Chapter 19)

KIF - A slang term for marihuana. (Chapter 19)

LANGUAGE - A code using spoken, written, or manual symbols as a medium of communication. (Chapter 16)

LARYNX - The upper part of the trachea which contains the vocal folds; voice box. (Chapter 16)

LEARNING - The acquiring of knowledge or skills through experience (either vicarious or first-hand). (Chapter 10)

LEARNING DISABILITY - Problems in specific areas of learning, that are not related to a lack of intelligence. (Chapter 20)

LENS - A transparent structure that is located directly behind the pupil and focuses the light rays on the retina. See the illustration on page 209. (Chapter 14)

LIMB - One of the extremities of the body, i.e., arm, leg. (Chapter 18)

LIP READING - See speech reading. (Chapter 15)

LYSERGIC ACID DIETHYLAMIDE - A powerful man-made chemical which produces hallucinations or delusions; LSD. (Chapter 19)

MARIHUANA - A stimulant drug found in the female Indian hemp plant, cannabis sativa, which has hallucinatory qualities. (Chapter 19)

MARY JANE - A slang name for marihuana. (Chapter 19)

MASSACHUSETTS VISION TEST - A test for near and far point muscular balance. (Chapter 4)

MATURATION - The sequential development of a person. Development may be in the areas of intellectual, physical, and social processes. (Chapter 10)

MEAN - The arithmetic average. The sum of the scores divided by the number of scores. (Chapter 7)

MEDIAN - The middle value in an ordered distribution of values. (Chapter 7)

MENTAL AGE - Level of intellectual functioning; an individual with a mental age of 6-0 is functioning intellectually like the average child who is chronologically 6-0 years old. (Chapter 10)

MENTAL RETARDATION - Subnormal general intellectual functioning that originates during the developmental period and is associated with impaired adaptive behaviors. (Chapter 10)

METH - A slang name for methedrine or methamphetamine. (Chapter 19)

METHAMPHETAMINE - A stimulant drug; methedrine. (Chapter 19)

METHEDRINE - A stimulant drug. (Chapter 19)

METROPOLITAN READINESS TEST - A group test of general aptitude for school tasks. (Chapter 17)

MIND BENDERS - A slang name for hallucinogens. (Chapter 19)

MIND BLOWERS - A slang name for hallucinogens. (Chapter 19)

MINIMAL BRAIN DYSFUNCTION - A term which has been used synonymously with learning disability. (Chapter 18)

MINIMAL NEUROLOGICAL HANDICAP - A term which has been used synonymously with learning disability. (Chapter 18)

MONOPLEGIA - A topographical classification of cerebral palsy in which only one limb is involved. (Chapter 18)

MONITORING - Feedback; the stage of information processing that follows a child's response (output) to stimuli in which he receives a reaction to his response (output). (Chapter 2)

MYOPIA - An eye disorder in which distant objects cannot be seen clearly; nearsightedness. See the illustration on page 210. (Chapter 14)

NARCOTIC - A category of drugs which relieve pain. (Chapter 19)

NASAL - Refers to the manner in which the consonants m, n, and ng are produced. (Chapter 16)

NEGATIVE CORRELATION - A correlation coefficient which indicates that as one variable increases the other variable decreases. (Chapter 10)

NEUROLOGICAL EVIDENCE - Information obtained from a professional evaluation which would indicate the presence or absence of damage to the central nervous system. (Chapter 3)

NORMAL CURVE - A model for handling and describing the behavior variables and characteristics of children. See also normal curve of error. (Chapter 7)

NORMAL CURVE OF ERROR - A model for handling and describing a distribution of data. See page 106 for a more complete explanation. (Chapter 7)

NORMAL DEVIATE - A uniform measure of the deviation or distance a score is located from the center of the normal curve, may be a positive or negative value; standard deviation. (Chapter 7)

NORMATIVE DATA - The raw scores and percentile ranks of a certain population used in standardizing a test. (Chapters 5, 8)

NORMS - A sample of a large number of people's behavior against which a particular person's behavior can be compared. (Chapter 5 - Records of scores that are kept on the standardization group of a test. (Chapter 8)

NYSTAGMUS - An eye disorder in which the eyes oscillate or have rapid, jerky, involuntary movements. (Chapter 14)

OBJECTIVE ITEMS - Questions on a test in which each answer can be clearly keyed and scored as correct or incorrect. (Chapter 5)

OBSERVATIONAL TECHNIQUES - Ways of observing a child as he performs a task and procedures for recording the observations. e.g., checklist, rating scale, anecdotal record. (Chapter 5)

ODD-EVEN RELIABILITY - Refers to a method of estimating the internal consistency of a test. Usually reported as a correlation coefficient which indicates the degree of relationship between the odd and even numbered items of the test.

OLFACTORY - The sense of smell. (Chapter 2)

OPTHALMOLOGIST - A medical doctor who specializes in diseases and defects of the eye. (Chapter 14)

OPIATES - Synthetic narcotic drugs. (Chapter 19)

OPTICIAN - A lens grinder. (Chapter 14)

OPTOMETRIST - A person trained to prescribe corrective lenses. He is not usually a medical doctor. (Chapter 14)

ORDERED DISTRIBUTION - A group of scores listed from high to low. (Chapter 7)

OSCILLATE - Move (Chapter 14)

OTOLOGIST - A medical doctor who specializes in disorders of the auditory mechanism. (Chapter 15)

OUTPUT - Vocal or motor activities. (Chapter 2)

PARADIGM - Model (Chapter 2)

PARAPLEGIA - A topographical classification of motor disability in which both legs are affected but neither of the arms. (Chapter 18)

PEER APPRAISAL TECHNIQUES - Questions which are asked of a child's peers or family to obtain information about the child's interests, attitudes and personal adjustment. For examples of peer appraisal techniques see pages 80-85. (Chapter 5)

PEP PILLS - A slang name for stimulant drugs. (Chapter 19)

PERCENTILE - The normal distribution curve divided into 100 equal parts. (Chapter 7)

PERCENTILE RANK - The percentage of persons in a normal distribution who score below a particular point. For an example see page 113. (Chapter 7)

PERCEPTION - The process of classifying and storing information received through the input channels. (Chapter 20)

PERCEPTUAL DEFICIT - A weakness in the processes of classifying, categorizing, or storing sensory information. (Chapter 20)

PERCEPTUAL DISCRIMINATION - The ability to identify the differences between stimuli in order to classify and categorize them. (Chapter 20)

PERCEPTUAL MEMORY - The ability to store sensory information. (Chapter 20)

PERCEPTUAL-MOTOR PROBLEMS - Disorders associated with the perception of auditory, vocal, or tactile stimuli and the motor response to the observed stimuli. (Chapter 18)

PERCEPTUAL-MOTOR SYSTEM - An information processing system which is circular in function. It includes four stages which are: input, information processing or storage, output, and feedback. See page 29 for an illustration of the system. (Chapter 2)

PERCEPTUAL RECALL - The ability to store and reuse information. (Chapter 13)

PERSEVERATION - Repetitive use of a behavior long after it has ceased to be appropriate. (Chapter 18)

PETIT MAL SEIZURE - A subtle epileptic seizure that lasts only a few seconds. The person remains conscious but slightly disoriented when recovered. Associated with petit mal epilepsy. (Chapter 18)

PEYOTE - A hallucinatory drug obtained from a cactus plant which grows in the southwestern United States. (Chapter 19)

PHONATION - The production of voice which takes place in the larynx. (Chapter 16)

PHONEMES - The sounds of a language. (Chapter 16)

PHONETICS - The general study of the sounds of speech including production, description, designation by written symbols and so on. (Chapter 16)

PHONICS - The relationship of printed letters in written language to the sounds of the language. (Chapter 16)

PHOTOPHOBIA - An extreme sensitivity to light. (Chapter 14)

PITCH - Highness or lowness of sound. (Chapter 16)

PLANNED EVALUATION - An evaluation in which the stimuli for eliciting behaviors are arranged in advance. (Chapter 5)

PLOSIVES - The manner in which the consonants p, b, t, d, k, and g are produced. (Chapter 16)

POSITIVE CORRELATION - A correlation coefficient which indicates that as one variable increases the other variable also increases. (Chapter 6)

PRACTICE EFFECT - A person who repeats a test or takes a parallel form of a test usually will get a slightly higher score the second time as a result of becoming familiar with item format, time limits, second guessing, etc. (Chapter 6)

PREDICTIVE VALIDITY - The extent to which an evaluation procedure is appropriate for estimating future performance; criterion-related validity. (Chapter 6)

PROCESSING - The act of integrating input information with information already present in the brain and selecting a method of responding. (Chapter 2)

PROFILE - The record, usually a graph, of a child's performance on several different measures. A profile may show strengths and weaknesses in performance if they exist. (Chapter 4)

PROFILING - Charting or graphing students' educational strengths and weaknesses. (Chapter 8)

PSEUDO-ISOCROMATIC PLATE TEST - A test for color blindness. (Chapter 14)

PUPIL - The small dark center of the eye. See the illustration on page 209. (Chapter 14)

PURE TONE AUDIOMETER - A device used for measuring hearing frequency and sensitivity. It covers a frequency range from 25 hertz to 8000 hertz. (Chapter 15)

QUADRAPLEGIA - A topographical classification of motor disability in which all four extremities are affected. (Chapter 18)

QUALITATIVE INFORMATION - Categorical non-numerical data. (Chapter 5)

QUALITY - With reference to the human voice, an individual recognizable characteristic, independent of pitch or loudness. (Chapter 16)

QUANTITATIVE INFORMATION - Numerical information; this type of information is meaningful when compared with some standard. (Chapter 5)

QUARTILE - One of the three points which divides a distribution into four parts, each representing 1/4 of the distribution. Q1 (first quartile) is the 25th percentile, Q2 = 50th percentile; Q3 = 75th percentile. (Chapter 7)

QUESTIONNAIRE - A set of questions, similar to those used in a structured interview, to which the individual responds in writing. (Chapter 5)

RANK ORDER - Arrangement of scores from high to low. (Chapter 6)

RANKED - Scores listed from high to low. (Chapter 7)

RATING SCALE - An observational technique which consists of a list of behaviors, characteristics, or traits, on each of which a rater indicates the degree of proficiency the child exhibits in his behavior, the amount of a certain behavior that he characteristically shows, or the quality of the product resulting from the child's behavior along a continuum. An illustration appears on page 77. (Chapter 5)

RAW SCORE - The total number of questions answered correctly. (Chapters 7 and 8)

READINESS TEST - An aptitude test designed to determine whether a child is mentally and/or physically able to benefit from instruction in a particular activity. (Chapter 5)

RECEPTIVE COMPONENTS - Visual, auditory, tactile, olfactory, or gustatory modalities. (Chapter 2)

REEFERS - A slang term for marihuana cigarettes. (Chapter 19)

REINFORCEMENT SCHEDULE - A plan used to determine the frequency of administering reinforcement. (Chapter 21)

REINFORCER - An event (or consequence) which follows a response and results in the more frequent occurrence (or strengthening) of the response. (Chapter 21)

RELIABILITY - Dependability of consistency of test scores; if results are highly reliable, then one can have confidence that results are nearly free of error. (Chapter 6)

REMEDIAL EDUCATION - Process of tracking down childrens' learning problems and doing something about the problems. (Chapter 1)

REPRESENTATIVE SAMPLE OF BEHAVIOR - An adequate number of behavior observations over time and in various situations. (Chapter 6)

REPRESENTATIVE SAMPLE OF CONTENT - An adequate number of test items on each topic taught based on the importance of the concept or percentage of time required to teach the concept. (Chapter 6)

RESPIRATION - The act of drawing air in and forcing it out by changing the size of the chest; one of the four ways in which sound is produced and modified. (Chapter 16)

RESONANCE - The selective reinforcement or cancellation of parts of the voice. (Chapter 16)

RESONATORS - Oral cavity, nasal cavity, and pharynx are the major resonators that modify voice. (Chapter 16)

RESOURCE TEACHER - A teacher who provides tutorial services or small group instruction to students with learning problems who are also enrolled in the regular grade. (Chapter 2)

RETINA - The light-sensitive lining of the eye onto which the light rays are focused. See the illustration on page 209. (Chapter 14)

REVERSALS IN READING - The behavior of reading certain words or letters right to left, i.e., reading saw for was, on for no, etc. (Chapter 18)

REVERSALS IN WRITING - An output behavior in which the student reverses the letter, symbol, number, or geometric configuration in graphic form. (Chapters 18 and 20)

RIGIDITY - A type of cerebral palsy characterized by widespread continuous muscle tension; the muscles of the body become stiff. (Chapter 18)

SAMPLING OF BEHAVIORS - Observing and recording a child's behaviors over a period of time and under various conditions. (Chapter 10)

SATCH COTTON - Cotton that has been used to strain drugs before injection. (Chapter 19)

SCRAMBLERS - A slang term for hallucinogens. (Chapter 19)

SCREENING - A procedure for sorting out from a total group children who may have problems. (Chapters 4 and 9)

SCREENING TEST - A test used for general surveys of skills or characteristics for the purpose of "sorting out" individuals who require more intensive diagnostic study. (Chapters 5, 9)

SEDATIVES - A category of drugs which act as relaxants and induce sleep; depressants. (Chapter 19)

SELECTION ITEMS - A type of test question in which several alternative answers are given and the student must recognize the correct answer; i.e., multiple choice, true-false, matching. (Chapter 5)

SELF-REPORT TECHNIQUES - Evaluation procedure designed to yield information from the child about his interests, attitudes and personal adjustment. For examples of self-report techniques see pages 81-85. (Chapter 5)

SENSITIVITY - A term associated with hearing that refers to the ability to hear soft or low-intensity sounds. (Chapter 15)

SENSING - The act of receiving information. (Chapter 20)

SENSORI-NEURAL HEARING LOSS - A hearing loss due to a dysfunction in the inner ear or in the nerve to the brain. (Chapter 15)

SENSORY RECEPTIVE MECHANISMS - The parts of the human organism needed to receive and understand stimuli, that is the eyes, ears, nose, tongue, skin, and brain. (Chapter 20)

SET - The user's frame of mind before taking a drug. (Chapter 19)

SETTING - The surroundings in which a drug is taken. (Chapter 19)

SHAPING - A technique of behavior modification in which behaviors which are successive approximations of the target behavior are reinforced; gradually the target behavior, which was not previously in the child's behavior repertoire, is acquired and strengthened. (Chapter 21)

SLEEPERS - A slang term for barbiturates. (Chapter 19)

SLOW LEARNER - This refers to children who are functioning intellectually between those who are obviously retarded and those who are intellectually average. (Chapter 10)

SMACK - A slang term for heroin. (Chapter 19)

SNELLEN TEST - A screening test for visual acuity. (Chapter 14)

SNOW - A slang term for cocaine. (Chapter 19)

SOCIAL ADJUSTMENT - Ability to maintain oneself independently and to conform to the responsibilities and standards of the community. (Chapter 10)

SOCIALLY DISADVANTAGED - Synonym for the culturally disadvantaged. (Chapter 11)

SOCIOGRAM - The graphic representation of the personal interactions and choices among a group of people. (Chapter 5)

SOCIOMETRIC DEVICE - An evaluation procedure used to determine the social structure of a group. An example appears on pages 83-84. (Chapter 5)

SPASTICITY - A type of cerebral palsy characterized by involuntary contraction of the muscles and jerky movement of the upper extremities. (Chapter 18)

SPECIAL EDUCATION SERVICES - Educational practices applied to exceptional children; i.e., speech therapy, psychological evaluations, remedial instruction. (Chapter 1)

SPEECH - Oral language. (Chapter 16)

SPEECH AND HEARING SPECIALISTS - Specialists trained in the assessment and remediation of speech and hearing problems. (Chapter 1)

SPEED - A slang term for methedrine or methamphetamine. (Chapter 19)

SPEECHREADING - A technique of auditory training which involves looking at facial expressions and actions of the speaker to pick up cues for what he is saying; lipreading. (Chapter 15)

SPEEDING - A slang term for taking methedrine or methamphetamine by injection. Reaction to the drug is more intense and more immediate. (Chapter 19)

STANDARD DEVIATION - A measure of the variability of scores. (Chapter 19)

STANDARDIZATION - The procedure of having standard directions and scoring so that normative data about others who have taken the test can be used. (Chapter 6)

STANDARDIZATION GROUP - A well-defined group of individuals on whom careful records of test scores have been kept. (Chapter 8)

STANDARDIZED TESTS - Tests which are administered in a specifically described standard way, scored in a particular way, and then compared with the performance of a standard group. (Chapter 5)

STANINE - A single digit derived score based on the normal curve. It ranges in value from 1 to 9 with a mean of 5. (Chapter 7)

STANFORD-BINET INTELLIGENCE SCALE - An individually administered general/aptitude test. A mental age and IQ are obtained from the pupil's performance on the test. (Chapter 5)

STICKS - A slang term for marihuana cigarettes. (Chapter 19)

STIMULANT - A category of drugs that produce excitation and alertness. (Chapter 19)

STIMULI - Any information that can be received by the senses; i.e., smells, sounds, textures, tastes, or visions, (Chapter 2)

STONED - A slang term for being high on drugs. (Chapter 19)

STRABISMUS - An eye disorder in which the lack of eye muscle coordination causes one or both eyes to deviate from the normal position; also known as cross-eyedness or squint. (Chapter 14)

STRAUSS SYNDROME - A symptom cluster of behaviors associated with brain injury or learning disability; includes such conditions as perceptual disorders, perseveration, conceptual disorders, and behavioral disorders. (Chapter 18)

STY - An inflamed swelling of a gland at the margin of an eyelid. (Chapter 14)

STRUCTURED INTERVIEW - An interview in which the person is asked a pre-determined set of questions; if more than one person is interviewed, the questions asked to each will be the same. An example appears on page 81. (Chapter 5)

STYCAR - Screening Test for Young Children; a test for visual acuity. (Chapter 14)

SUBJECTIVE ITEM - Test questions in which judgment of the scorer somewhat determines the score the person will receive. (Chapter 5)

SUBTEST - One of the tests within a test battery, i. ., word meaning subtest in the Metropolitan Readiness Test. (Chapter 17)

SUCCESSIVE APPROXIMATION - The process of gradually increasing expectations for a child to display behaviors which are more like (or nearer to) the desired target behavior; used in shaping behaviors not previously in a child's repertoire. (Chapter 21)

SUPPLY ITEMS - A type of test item which requires that a word or short phrase be written in to the answer. A test composed of supply type items is commonly called a completion test. (Chapter 5)

SYMBOLIZATION - The assignment of meaning. (Chapter 16)

SYMMETRICAL - The same or equal on both sides. (Chapter 7)

SYMPTOM CLUSTERS - Behaviors which are similar to the extent that they can be logically grouped. (Chapter 12)

TACTILE - The sense of touch. (Chapter 2)

TARGET BEHAVIOR - The final desired behavior which is the goal of shaping and is not currently in the child's repertoire of behaviors; i.e., he will not exhibit this behavior spontaneously. (Chapter 21)

TEA - A slang term for marihuana. (Chapter 19)

TEACHING-LEARNING PROCESS - A circular process which encompasses formulating behavioral objectives, teaching, evaluating, providing feedback to the learner, and then formulating new objectives, etc. See page 53 for an illustration. (Chapter 2)

TEST-RETEST RELIABILITY - Consistency of test scores for the same test from one time to another time. (Chapter 6)

THRESHOLD OF HEARING - That point at which sound can be detected; it is measured in decibels. (Chapter 15)

TOLERANCE - An increasingly larger and larger dose of drugs are required to produce the desired effect. (Chapter 19)

TRAINABLE - A classification of mental retardation that includes children who are not usually expected to develop academic skills. (Chapter 10)

TRIP - A slang term for hallucinations or delusions produced by hallucinogenic drugs. (Chapter 19)

TRIPLEGIA - A topographical classification of cerebral palsy in which there is the involvement of three extremities, usually two legs and one arm. (Chapter 18)

T-SCORE - A derived score with a mean of 50 and a standard deviation of 10; plus or minus 10 is 1 normal deviate above or below the mean. (Chapter 7)

TURNED-ON - A slang phrase for being under the influence of drugs. (Chapter 19)

INSTRUCTIONAL INTERVIEW - An interview which may follow one of many directions depending upon the answers given by the interviewee. See the examples on page 82. (Chapter 5)

UPPERS - A slang term for stimulants. (Chapter 19)

USABILITY - The variables considered in selecting a test such as ease of administration, scoring and interpreting results, time required for administering, number of subtests, and the materials required to give the test, and cost. (Chapter 6)

VALIDITY - Substantiation that the test measures what it is designed to measure. (Chapter 6)

VISUAL ACUITY - Sharpness of vision. (Chapter 14)

VISUAL PERCEPTUAL DISCRIMINATION - The ability to differentiate among visual stimuli. (Chapter 20)

VISUAL PERCEPTUAL PROBLEMS - Difficulties in classifying, categorizing, or storing visual sensory information. (Chapter 20)

VOCAL FOLDS - Modified parts of the walls of the larynx that are held together with moderate tension when voice is produced. (Chapter 16)

VOICED SOUND - The voice produced at the larynx, as well as the articulatory movements in the mouth. (Chapter 16)

VOICE QUALITY PROBLEMS - Problems in which the voice is described as husky, breathy, nasal, strident, etc. (Chapter 16)

WAIS - Wechsler Adult Intelligence Scale. An individually administered intelligence test for adults which yields a verbal IQ, a performance IQ, and a full scale IQ.

WISC - Wechsler Intelligence Scale for Children. An individually administered intelligence test which yields a verbal IQ, a performance IQ, and a full scale IQ. It is appropriate for children from ages 5 to 15. (Chapter 5)

WITHDRAWAL SYMPTOMS - The physical reactions of the body after the drug's affect has worn off. (Chapter 19)

WPPSI - Wechsler Intelligence and Primary Scale of Intelligence. An individually administered intelligence test which is an extension of the WISC. It is appropriate for ages 4 to 6-1/2 years. (Chapter 5)

ADDITIONAL REFERENCES

In addition to those specific references listed at the end of each chapter in the Handbook, the following sources were consulted during the preparation of the CARE course.

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Teacher Referral Statement

Name of Child: ______________________ Date of Report: ______________

Birthdate: __________________________ Sex: ______________________

Teacher: ____________________________ Grade: ____________________

I. Achievement Data

Describe the child's typical performance in each area. Use behavioral terms so that the description is precise. Attach samples of the child's work where applicable. Cite any available test results.

A. Oral Language ____

____

Written Language ____

____

B. Reading Comprehension ______________________________________

____

Word Analysis Skills ____________________________________

____

C. Mathematical Comprehension __________________________________

____

Computation Abilities ___________________________________

____

D. Music ____

____

Art ____

____

Dramatic Play ____

____

E. Other ____

____

Name of Child: ____________________

II. Learning Behaviors Checklist

Place a check mark next to the statements which describe behavior usually exhibited by the child. Use the comment space to elaborate on your choices and to provide supporting information.

A. Behavior Related to Inputs

_____ is attentive during most activities

_____ is attentive only during his favorite activities

_____ rarely pays attention

_____ indicates a preference for material received through the auditory channel

_____ indicates a preference for material received through the visual channel

_____ does not indicate a preference for one input channel over another

_____ performs better when information is received through the auditory channel

_____ performs better when information is received through the visual channel

_____ performs better when he receives information through a combination of visual and auditory channels

_____ is able to use tactile sensations

_____ exhibits unusual behavior during activities which require good hearing

_____ exhibits unusual behavior during activities which require good vision

Comment: ____

____

____

____

Name of Child: ______________________

B. Behaviors Related to Information Processing

_____ organizes tasks and materials so that time is used efficiently

_____ has short-term retention for most learning areas

_____ has long-term retention for most learning areas

_____ can recall information for only some selected learning areas

_____ does not remember information

_____ discriminates between sounds

_____ discriminates between shapes and figures

_____ discriminates between letters, numbers, words

_____ can make associations

_____ can recognize associations

_____ can make generalizations

_____ can differentiate between generalizations and specific facts

_____ translates from concrete experiences to abstractions

_____ is able to profit from incidental learning

_____ finishes (or attempts to finish) tasks he starts

_____ completes only those tasks he enjoys

_____ is easily distracted regardless of task

_____ follows instructions directed to a group

_____ follows instructions directed to him individually

_____ follows one direction but not a sequence of directions

Comment: ____

____

____

Name of Child:_______________________

C. Behaviors Related to Outputs

_____ volunteers comments, answers, etc. during group activities

_____ speaks spontaneously on a one-to-one basis to other child and/or adults

_____ speaks only when called on or when conversation is initiated by another person

_____ must be urged to speak

_____ shows specific speech problem (describe)

_____ performs gross motor skills in coordinated fashion

_____ performs fine motor skills in coordinated fashion

_____ is clumsy and awkward in most motor activities

_____ exhibits involuntary repetition when making a motor response

_____ exhibits involuntary repetition when making a spoken response

_____ uses a vocabulary typical of older children

_____ uses a vocabulary typical of children his age

_____ uses a limited vocabulary

_____ uses compound and complex sentences

_____ uses only simple sentences

_____ uses single words and some phrases, but not complete sentences

_____ reverses some letters and/or numbers when writing

_____ prefers right hand for most activities

_____ prefers left hand for most activities

_____ uses either hand with about equal dexterity

Comment: ____

____

____

____

Name of Child: ______________________

D. Behaviors Related to Feedback

(Place a check mark next to the events which are rewarding for the child)

_____ consumable rewards such as candy
_____ tangible rewards such as tokens which can be traded for food, prizes
_____ physical attention such as a hug, a pat on the back
_____ symbolic rewards such as grades, stars
_____ competitive rewards such as being named the winner
_____ comments of approval (verbal praise) from an adult
_____ comments or indications of approval from peers
_____ opportunities to pursue activities of his own choosing
_____ knowledge of results such as being told an answer is correct

Place a check mark next to statements which apply to the child.

_____ exhibits a strong preference for a certain type of reward;
if so, specify ____
_____ does not display a preference for any one type of reward but works well for a variety of rewards
_____ needs to be rewarded several times during completion of a task
_____ can delay receiving reward until completion of task
_____ can delay receiving reward until several tasks are completed

Comment: ____

____

____

____

Name of Child: ______________________

III. Physical Symptoms Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach any medical reports which are available.

_____ is often absent

_____ is usually tired

_____ is overly active

_____ is listless, lethargic

_____ is underweight

_____ is overweight

_____ complains of headaches, dizziness

_____ has unusual posture when doing visual tasks

_____ has unusual posture when standing

_____ has unusual gait

_____ appearance of eyes is abnormal

_____ has frequent earaches

Comment: ____

____

____

____

Name of Child: ____________________

IV. Social-Emotional Behaviors Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach parent conference reports, if any.

_____ prefers working with others

_____ prefers to work by himself

_____ exhibits about equal willingness to work with others and alone

_____ gets along with others in work situations

_____ gets along with others in play situations

_____ refuses to participate in group activities

_____ adapts easily to changes

_____ needs to be carefully prepared and gradually introduced to change

_____ behavior in group activities is predictable

_____ is more easily excited than others his age

_____ has temper tantrums (kicks, screams, beats on floor, etc.)

_____ makes a deliberate attempt to be by himself

_____ exhibits an unusual amount of persistence

_____ gives up and moves to another activity when he experiences difficulty

_____ is aggressive (fights, kicks, hits, verbal insults, etc.)

Comment: ____

____

____

____

Teacher Referral Statement

Name of Child: ____________________ Date of Report: _____________

Birthdate: ____________________ Sex: ____________________

Teacher: ____________________ Grade: ____________________

I. Achievement Data

Describe the child's typical performance in each area. Use behavioral terms so that the description is precise. Attach samples of the child's work where applicable. Cite any available test results.

A. Oral Language ______________________________________

Written Language ______________________________________

B. Reading Comprehension ______________________________________

Word Analysis Skills ______________________________________

C. Mathematical Comprehension ______________________________________

Computation Abilities ______________________________________

D. Music ______________________________________

Art ______________________________________

Dramatic Play ______________________________________

E. Other ______________________________________

Name of Child: ______________________

II. Learning Behaviors Checklist

Place a check mark next to the statements which describe behavior usually exhibited by the child. Use the comment space to elaborate on your choices and to provide supporting information.

A. Behavior Related to Inputs

_____ is attentive during most activities

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_____ indicates a preference for material received through the auditory channel

_____ indicates a preference for material received through the visual channel

_____ does not indicate a preference for one input channel over another

_____ performs better when information is received through the auditory channel

_____ performs better when information is received through the visual channel

_____ performs better when he receives information through a combination of visual and auditory channels

_____ is able to use tactile sensations

_____ exhibits unusual behavior during activities which require good hearing

_____ exhibits unusual behavior during activities which require good vision

Comment: ____

____

____

____

Name of Child: ______________________

B. Behaviors Related to Information Processing

_____ organizes tasks and materials so that time is used efficiently

_____ has short-term retention for most learning areas

_____ has long-term retention for most learning areas

_____ can recall information for only some selected learning areas

_____ does not remember information

_____ discriminates between sounds

_____ discriminates between shapes and figures

_____ discriminates between letters, numbers, words

_____ can make associations

_____ can recognize associations

_____ can make generalizations

_____ can differentiate between generalizations and specific facts

_____ translates from concrete experiences to abstractions

_____ is able to profit from incidental learning

_____ finishes (or attempts to finish) tasks he starts

_____ completes only those tasks he enjoys

_____ is easily distracted regardless of task

_____ follows instructions directed to a group

_____ follows instructions directed to him individually

_____ follows one direction but not a sequence of directions

Comment: ____

____

____

Name of Child:________________________

C. Behaviors Related to Outputs

_____ volunteers comments, answers, etc. during group activities

_____ speaks spontaneously on a one-to-one basis to other child and/or adults

_____ speaks only when called on or when conversation is initiated by another person

_____ must be urged to speak

_____ shows specific speech problem (describe)

_____ performs gross motor skills in coordinated fashion

_____ performs fine motor skills in coordinated fashion

_____ is clumsy and awkward in most motor activities

_____ exhibits involuntary repetition when making a motor response

_____ exhibits involuntary repetition when making a spoken response

_____ uses a vocabulary typical of older children

_____ uses a vocabulary typical of children his age

_____ uses a limited vocabulary

_____ uses compound and complex sentences

_____ uses only simple sentences

_____ uses single words and some phrases, but not complete sentences

_____ reverses some letters and/or numbers when writing

_____ prefers right hand for most activities

_____ prefers left hand for most activities

_____ uses either hand with about equal dexterity

Comment: ____

____

____

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Name of Child: ____________________

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_____ competitive rewards such as being named the winner
_____ comments of approval (verbal praise) from an adult
_____ comments or indications of approval from peers
_____ opportunities to pursue activities of his own choosing
_____ knowledge of results such as being told an answer is correct

Place a check mark next to statements which apply to the child.

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_____ can delay receiving reward until several tasks are completed

Comment: ____

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____

____

Name of Child: ____________________

III. Physical Symptoms Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach any medical reports which are available.

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____ is overly active

____ is listless, lethargic

____ is underweight

____ is overweight

____ complains of headaches, dizziness

____ has unusual posture when doing visual tasks

____ has unusual posture when standing

____ has unusual gait

____ appearance of eyes is abnormal

____ has frequent earaches

Comment: ____

____

____

____

Name of Child: ____________________

IV. Social-Emotional Behaviors Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach parent conference reports, if any.

_____ prefers working with others

_____ prefers to work by himself

_____ exhibits about equal willingness to work with others and alone

_____ gets along with others in work situations

_____ gets along with others in play situations

_____ refuses to participate in group activities

_____ adapts easily to changes

_____ needs to be carefully prepared and gradually introduced to change

_____ behavior in group activities is predictable

_____ is more easily excited than others his age

_____ has temper tantrums (kicks, screams, beats on floor, etc.)

_____ makes a deliberate attempt to be by himself

_____ exhibits an unusual amount of persistence

_____ gives up and moves to another activity when he experiences difficulty

_____ is aggressive (fights, kicks, hits, verbal insults, etc.)

Comment: ____

____

____

____

Teacher Referral Statement

Name of Child: ____________________ Date of Report: ______________

Birthdate: ____________________ Sex: ______________

Teacher: ____________________ Grade: ______________

I. Achievement Data

Describe the child's typical performance in each area. Use behavioral terms so that the description is precise. Attach samples of the child's work where applicable. Cite any available test results.

A. Oral Language ____________________

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Written Language ____________________

____

B. Reading Comprehension ____________________

____

Word Analysis Skills ____________________

____

C. Mathematical Comprehension ____________________

____

Computation Abilities ____________________

____

D. Music ____________________

____

Art ____________________

____

Dramatic Play ____________________

____

E. Other ____________________

____

Name of Child: ____________________

II. Learning Behaviors Checklist

Place a check mark next to the statements which describe behavior usually exhibited by the child. Use the comment space to elaborate on your choices and to provide supporting information.

A. Behavior Related to Inputs

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_____ does not indicate a preference for one input channel over another

_____ performs better when information is received through the auditory channel

_____ performs better when information is received through the visual channel

_____ performs better when he receives information through a combination of visual and auditory channels

_____ is able to use tactile sensations

_____ exhibits unusual behavior during activities which require good hearing

_____ exhibits unusual behavior during activities which require good vision

Comment: ____

____

____

____

Name of Child: ____________________

B. Behaviors Related to Information Processing

_____ organizes tasks and materials so that time is used efficiently

_____ has short-term retention for most learning areas

_____ has long-term retention for most learning areas

_____ can recall information for only some selected learning areas

_____ does not remember information

_____ discriminates between sounds

_____ discriminates between shapes and figures

_____ discriminates between letters, numbers, words

_____ can make associations

_____ can recognize associations

_____ can make generalizations

_____ can differentiate between generalizations and specific facts

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_____ is easily distracted regardless of task

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_____ follows instructions directed to him individually

_____ follows one direction but not a sequence of directions

Comment: ____

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Name of Child:________________________

C. Behaviors Related to Outputs

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_____ exhibits involuntary repetition when making a motor response

_____ exhibits involuntary repetition when making a spoken response

_____ uses a vocabulary typical of older children

_____ uses a vocabulary typical of children his age

_____ uses a limited vocabulary

_____ uses compound and complex sentences

_____ uses only simple sentences

_____ uses single words and some phrases, but not complete sentences

_____ reverses some letters and/or numbers when writing

_____ prefers right hand for most activities

_____ prefers left hand for most activities

_____ uses either hand with about equal dexterity

Comment: ____

____

____

____

Name of Child: ____________________

D. Behaviors Related to Feedback

(Place a check mark next to the events which are rewarding for the child)

_____ consumable rewards such as candy
_____ tangible rewards such as tokens which can be traded for food, prizes
_____ physical attention such as a hug, a pat on the back
_____ symbolic rewards such as grades, stars
_____ competitive rewards such as being named the winner
_____ comments of approval (verbal praise) from an adult
_____ comments or indications of approval from peers
_____ opportunities to pursue activities of his own choosing
_____ knowledge of results such as being told an answer is correct

Place a check mark next to statements which apply to the child.

_____ exhibits a strong preference for a certain type of reward;
if so, specify ____
_____ does not display a preference for any one type of reward but works well for a variety of rewards
_____ needs to be rewarded several times during completion of a task
_____ can delay receiving reward until completion of task
_____ can delay receiving reward until several tasks are completed

Comment: ____

____

____

____

Name of Child: ______________________

III. Physical Symptoms Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach any medical reports which are available.

_____ is often absent

_____ is usually tired

_____ is overly active

_____ is listless, lethargic

_____ is underweight

_____ is overweight

_____ complains of headaches, dizziness

_____ has unusual posture when doing visual tasks

_____ has unusual posture when standing

_____ has unusual gait

_____ appearance of eyes is abnormal

_____ has frequent earaches

Comment: ____

____

____

____

Name of Child: ____________________

IV. Social-Emotional Behaviors Checklist

Place a check mark next to the statements which apply to the child. Use the comment space to elaborate and provide supporting information. Attach parent conference reports, if any.

_____ prefers working with others

_____ prefers to work by himself

_____ exhibits about equal willingness to work with others and alone

_____ gets along with others in work situations

_____ gets along with others in play situations

_____ refuses to participate in group activities

_____ adapts easily to changes

_____ needs to be carefully prepared and gradually introduced to change

_____ behavior in group activities is predictable

_____ is more easily excited than others his age

_____ has temper tantrums (kicks, screams, beats on floor, etc.)

_____ makes a deliberate attempt to be by himself

_____ exhibits an unusual amount of persistence

_____ gives up and moves to another activity when he experiences difficulty

_____ is aggressive (fights, kicks, hits, verbal insults, etc.)

Comment: ____

____

____

____